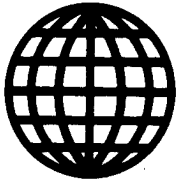


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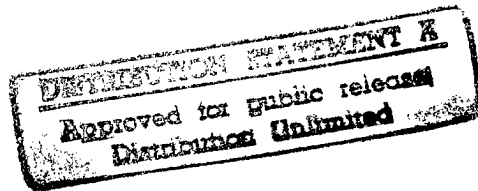
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SOVIET UNION ECONOMIC AFFAIRS

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GOSAGROPROM OFFICIAL REVIEWS APK ECONOMIC MANAGEMENT

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 5, Apr 87 pp 23-29

[Article by A. Zavgorodniy, chief of the Economic Mechanism Improvement and Price Setting Administration of the USSR Gosagroprom [State Agro-Industrial Committee]: "Introducing Economic Methods of Management More Assiduously"]

[Text] The country's agro-industrial complex is now in a critical transitional stage. The 27th CPSU Congress has set workers in the fields and on the farms and employees of processing enterprises the task of bringing about a sharp increase in production efficiency and markedly improving the supply of foodstuffs for the public and high-quality raw material for the national economy.

A conference in the CPSU Central Committee in January 1987 discussed the tasks of party organizations and soviet and economic organs connected with implementation of the decree "On urgent measures to increase labor productivity in agriculture based on the introduction of efficient forms for its organization and cost accounting [khozraschet]." The conference pointed out the necessity for accelerating fulfillment of the Food Program of the USSR and the crucial transition in the agrarian sector of the economy.

New impetus was given to accelerate restructuring and resolve the tasks that were set by the January (1987) Plenum of the CPSU Central Committee.

The shift from chiefly administrative methods of management to economic ones, based on broad introduction of the current achievements of scientific and technical progress, advanced experience and progressive forms of labor organization and wages in kolkhozes and sovkhozes, at enterprises, and in APK [agro-industrial complex] organizations, is the principal, key direction in carrying out the plans outlined.

"The path to high labor productivity and production growth," M. S. Gorbachev noted at the CPSU Central Committee conference cited above, "lies through a shift to the intensive track, new technologies and vitalization of the human factor. This path lies through improvement in the management system and the economic operation mechanism, through the reform of social conditions in the countryside. This, strictly speaking, is the essence of this mechanism. And

this is not simply a discussion today. But it is the fact that we have already tried it out in many republics, not to mention kolkhozes and sovkhozes. In a word, we have matured to ensure that the potential of the APK begins to have an effect in practice and provide a good yield."

In the first year of the 12th Five-Year Plan, positive improvements have taken place, production efficiency has been increased, and a turning point toward efficient use of the resource potential, as well as vitalized implementation of social policy in the countryside, has been noted in the development of APK sectors. The kolkhozes, sovkhozes, enterprises and organizations of the agro-industrial complex, operating under the new economic conditions of management, have achieved positive results.

At present, about 9,000 industrial enterprises and enterprises of the foodstuff, meat, dairy and fruit and vegetable canning sectors of industry, initial processing of cotton and flax, and other sectors of the USSR Gosagroprom are operating under the new system of management. Under the new system, the role of enterprises in drafting economic and social development plans has been reinforced, and their responsibility for providing output for the public and the national economy and for implementing plan targets with the lowest inputs of manpower, material and financial resources has been increased as well. The most important indicator for evaluating enterprises' activity is fulfillment of targets for the volume of output being sold, taking into account the contracts for its delivery to consumers in strict conformity with the quantity ordered, quality, assortment and deadlines.

The number of indicators being approved has been significantly reduced and the role of economic norms has been increased. Enterprises have been offered wide opportunities to take advantage of the achievements of technical progress and to increase labor collectives' incentive to raise production efficiency and reinforce cost accounting. Industry's shift to the new management conditions makes it possible to improve the activity of industrial enterprises and increase their efficiency.

In the food industry of the Ukrainian SSR, which was shifted to the new management conditions, the number of workers receiving supplementary payments in the 1984-1986 period increased ninefold and the number of ITR's [engineering and technical employees] for whom bonuses were established increased by 26 percent as much; the average monthly total of the supplementary payments to wage rates per worker increased from 6.5 rubles in 1983 to 12.8 rubles in 1985, and the bonuses added to the salaries of ITR's and employees increased from 12.6 to 16.5 rubles, respectively. The increased economic incentive has contributed to reinforcement of labor discipline and reduction of losses in work time.

The Minsk Meat Industry Association has been operating under the new management conditions since 1985. In the 1985-1986 period, its output volume increased by 6.8 percent as much compared with 1984, the output per worker increased by 2.7 percent as much, the proportion of high-grade output increased by 43.2 percent as much, and above-plan profit rose by 3.3 million rubles. All expenditures for technical re-equipment of production are being

defrayed through the enterprise's development fund. The total sum in the economic incentive fund was increased by 26.2 percent as much compared with 1984, and the fund for social, cultural and general-purpose measures rose by 46 percent as much. Bonuses per worker under the new management conditions totaled 40 percent (24 percent before the shift to the new conditions).

The principles of cost accounting activity are being assiduously introduced at industrial enterprises in the USSR Gosagroprom system. At present, about 400,000 persons, or one-third of the total work force, are working in cost-accounting [khozaschetnyye] brigades. However, the proportion of self-supporting brigades working under collective contract conditions is still low.

Work is being continued to introduce cost accounting and progressive forms of labor organization and wages in kolkhozes and sovkhozes.

Introduction of cost accounting and the human form of controlling expenditures and intensive technologies is the most important factor in the growth of the economy. By developing themselves through their own incomes, farms are responsible for the economic condition of production, recovery of expenditures, and providing for the necessary savings and their efficient utilization. Cost accounting principles in managing production increase the economic motivation for all workers in an enterprise to achieve high end results in their work.

Workers of the "Bolshevik" kolkhoz in Novosibirsk Oblast are dynamically increasing output and reinforcing the farm's economy. All stock breeders are working in contract teams, which has reduced production expenditures appreciably and raised labor productivity. Whereas 4.5 man-hours were required to produce 1 quintal of milk before the shift to the new management conditions, 1.8 man-hours are required now, and each cattle farm worker obtains an average increase in live weight of 120 tons, whereas it was 20 tons previously.

Improvement in democratic management methods, the introduction of cost accounting and collective contracting, and economic incentive for the workers have made it possible to develop a profitable farm on the Kolkhoz imeni Lenin in Koverninskiy Rayon, Gorkiy Oblast. In 1986, the net income was 4.5 million rubles, or an average of 1,200 rubles per hectare. The farm's profitability amounted to 54 percent, and labor productivity was increased by 17 percent as much, with remuneration for it increased by 3 percent as much.

The experience of a number of farms which have operated for many years under cost accounting principles attests to the fact that just bringing plan targets to subunits and periodically monitoring their fulfillment do not increase production efficiency appreciably. Monitoring inputs by the checking method [chekovaya forma] is the most ideal and practicable system for efficient, day-to-day verification of target fulfillment under cost accounting. Verification of the actual consumption of resources by brigade leaders, field team leaders and the supervisors of other production subunits, compared with established

limits, makes it possible to take prompt steps to prevent their excessive consumption in the production process. It is necessary for managers and specialists on the farms of cost-accounting collectives to make extensive use of the checking method in the day-to-day monitoring of expenditures in all production subunits.

The "Zavet Iliche" kolkhoz was one of the first in localities near Moscow to introduce internal economic accounting [vnutrikhozyaystvennyy raschet] using the checking system. As a result of applying the efficient method of managing expenditures, the farm's production volumes increased in 1986, and at the same time, fodder valued at over 55,000 rubles, petroleum products valued at 78,000 rubles, and funds for current maintenance of buildings and structures totaling 30,000 rubles were economized.

Agricultural production at the "Rodina" kolkhoz in Krasnodar Kray has been based on the principles of internal economic accounting since 1975, and the checking method of monitoring expenditures was introduced in 1985. The wages of the kolkhoz managers and specialists were made dependent on the results of target fulfillment under cost accounting, and democratism is being put into practice extensively in the activity of cost-accounting subunits.

The introduction of internal economic accounting in all subunits has been a decisive factor in substantially increasing production and sales of all agricultural products, increasing incomes, profitability and labor productivity, and reducing direct expenditures. Thus, the average annual sales of grain over the years of the 11th Five-Year Plan increased by 30 percent as much compared with the 10th Five-Year Plan; the sales of meat rose by 17 percent and the sales of milk increased by 87 percent as much. Labor productivity per worker was raised by a factor of 1.5 and wages were increased by 12 percent as much. In 1986 the farm's profit amounted to more than 7 million rubles, with profitability of 85 percent. There are more than 28 million rubles of net assets in the farm's accounts.

Many contract collectives, as well as collectives which work under a family contract, are achieving high indicators in their work. For example, on the "Kochkovskoye" experimental production farm in Novosibirsk Oblast, D. D. Gyunter's team works under the principles of a collective contract. The five-member team has been assigned 1,328 hectares of land, which is used to raise grain crops (mainly in accordance with intensive technology) and fodder crops to fatten the 500 head of young cattle they have been assigned. For each member of the team in 1986, 281 tons of grain were produced, the increase in the live weight of the cattle totaled 20 tons, and gross production amounted to nearly 83,000 rubles. The labor productivity of the team is over three times higher and the proportion of wages in the cost of gross production amounts to 6.5 percent, or 2.4 times lower than for the farm as a whole. These achievements are the result of collective action, independence and coordination in the team's work, the introduction of cost accounting principles, and each team member's responsibility for the end results of the work.

Organizational restructuring of the management of the agro-industrial complex has been basically completed. All industrial enterprises and associations in the USSR Gosagroprom system have been shifted to the new management conditions. Work is being carried out at kolkhozes and sovkhoses to provide for broader employment of economic methods of management and introduction of new forms of integration for agriculture and industry, and to ensure that the output produced is brought to the consumer.

At present, 18 new agro-industrial combines, the same type as the "Kuban" combine in Krasnodar Kray, are operating in the RSFSR, the Ukrainian SSR and the Belorussian SSR. The Standard Regulations on the Agro-industrial Combine have been drafted and approved by the USSR Gosagroprom in coordination with the ministries and departments concerned. A number of farms are operating on the principles of self-support [samookupayemost] in Stavropol Kray and in six rayons of the RSFSR.

A promising method for introducing advanced technologies and the achievements of scientific and technical progress in production on a mutually profitable contract basis between the head enterprise and participants in the production system is being worked out at the "Adazhi" agrofirma in the Latvian SSR. The "Novomoskovskoye" Agro-industrial Association has been established in Novomoskovskiy Rayon, Tula Oblast, for the purpose of further developing the principles of enterprises' work under full cost accounting, self-support, and conditions for reinforcing democratic fundamentals in management, as specified by the January (1987) Plenum of the CPSU Central Committee.

Experience in operating the agro-industrial combines that have been established confirms that the correct pattern for integrating agriculture and industry has been found.

The "Ramenskiy" Agro-industrial Combine near Moscow is picking up speed. The plans for production and sale of output for 1986 were fulfilled with a profit of 40 million rubles. The combine is accumulating experience in selling its products at markets in Moscow and Moscow Oblast.

But there are still many problems in the young organizations. Problems of product sales and mutual relationships with a consumer cooperative have to be more efficiently resolved. The processing industry of the combines must be provided with new equipment. The problems which arise in moving the products from the fields and farms to the store counters have to be resolved promptly.

Enterprises and many rayons, oblasts and krays are making the transition to the higher level of management--self-support and self-financing--more assiduously. For example, kolkhozes and sovkhoses in Stavropol Kray are working for the second year under conditions of an economic experiment--they are engaged in expanded reproduction based on their own assets, without involving state subsidies. Initial results of operation under the new conditions attest to the fact that the 1986 plan for production and sale to the state of all types of agricultural output has been overfulfilled. The total monetary assets in the accounts of the kolkhozes and sovkhoses increased

by 69 million rubles, twice as much compared with 1985. While there were still enterprises operating at a loss in Stavropol Kray in the 11th Five-Year Plan, there have been none since 1986 and the average level of profitability has reached 30 percent, compared with 17 percent in the last five-year plan.

The positive experience in the work of the "Stavropolskoye" Broiler Association attests to the high work efficiency of enterprises operating under the principles of self-support and self-financing. Each year the association's receipts exceed all the expenditures for production and ensure that payments to the budget that were established are made and loans from the USSR Gosbank that were provided earlier are paid off. The annual carryover surplus of monetary assets amounts to about 15 million rubles. For the third year the association is not making use of bank credit, it has refused markups on purchase prices for output, and the increase in labor productivity is considerably in excess of the increase in wages.

The "Stavropolskoye" association has voluntarily included lagging poultry processing enterprises in its organization and is now investing considerable assets to renovate them.

At the same time, it was noted at the January (1987) Plenum of the CPSU Central Committee and at the conference in the CPSU Central Committee on 23 January that changes for the better are being made slowly, that positive trends in developing the APK sectors and the entire national economy are just beginning to show their worth, and that the necessary stability has to be gained in their development. Experience in the first year of the 12th Five-Year Plan has shown that omissions and shortcomings exist in the activity of the agro-industrial complex and that reserves are not being utilized. All the levers in the new economic mechanism have to begin functioning to the full extent. The most lag has been permitted by the Uzbek SSR, the Azerbaijan SSR, the Moldavian SSR, and the Latvian SSR. Mastery of intensive technologies for cultivating grain crops must be accelerated and their yield must be increased.

A fundamental change is required in the production and procurement of industrial crops. Although their production in 1986 increased somewhat over the average annual level for the 11th Five-Year Plan, the plan for purchases was still not fulfilled. A particularly substantial lag was permitted by the Kazakh SSR, which fulfilled 53 percent of the plan for purchases of oil-bearing crops, and by the RSFSR, which fulfilled 77 percent of this plan. There was a major lag in sugar beet production on farms of the Ukrainian SSR, and about 10 million tons were not provided to the state under the plan for purchases.

A decrease in production and purchases of cotton was permitted in 1986, compared with the average annual level for the 11th Five-Year Plan. Some 711,000 tons of raw cotton were undersupplied by the cotton ginning industry from just the farms in the Uzbek SSR. The plan for purchases of raw cotton as a whole was not fulfilled by all the cotton growing republics.

Certain shortcomings are being observed in the development of livestock breeding as well. Thus, in 1986 every fifth farm did not fulfill the plan for the sale of milk and every sixth farm did not fulfill the plan for the sale of

cattle and poultry. In the Latvian SSR, Estonian SSR, and Turkmen SSR, the purchases of cattle and poultry were lower than those planned in accordance with the five-year plan. The situation is the same in the Georgian SSR and Azaerbaijan SSR for milk purchases.

Advanced forms of organizing milk production are being introduced slowly. Thus, only 34 percent of the total number of cows have been shifted from availability in the public sector to the flowline - shop system in milk production. Sterility among cows is high. According to specialists' assessments, the losses from sterility of milk cows amount to over 1 billion rubles. Farms in the Uzbek SSR, Turkmen SSR, Georgian SSR, Azerbaijan SSR and Kazakh SSR have an especially low birth rate for calves per 100 cows.

The efficiency of agricultural production is low. For example, more than 6,000 farms operated at a loss in 1986. Expenditures increased by 4.5 percent for sugar beet production and 6.5 percent for vegetable production over the 1985 level.

There has been less attention to efficient and effective use of raw material for development of foodstuff production in the state agro-industrial committees of certain union republics.

Major improvements have not taken place in resolving the problem of product quality. In the RSFSR, 19 percent of the cattle provided for procurements in 1986 were below average fatness and leanness; the figures were 15 percent in the Tajik SSR and 16 percent in the Moldavian SSR. During this period, more than 50 percent of the sheep sold to the state by farms in the Uzbek SSR and the RSFSR were substandard.

The variety and quality of individual types of foodstuffs, including grain, vegetable oils, and meat and milk products, still do not meet current consumer demands in many cases.

The problems of increasing production of the most important types of advanced, highly efficient industrial output--potato products, quick-frozen fruits, berries and vegetables, semifinished products and prepared dishes--remain unresolved. The plan for turning out these types of products was not fulfilled: whereas the plan called for 33,800 tons of quick-frozen products, only 8,400 tons were produced. The material and technical base for turning out these types of products is still poor.

The conference in the CPSU Central Committee in January 1987 focused attention on the low efficiency in introducing cost accounting and advanced forms of organizing labor and wages. At present, 72 percent of the farms are operating on the basis of cost accounting principles and the checking method of monitoring expenditures has been introduced at 20 percent of them.

In 1986, over 11 million persons, who were assigned three-fourths of the arable land and 60 percent of the productive livestock, were working under a collective contract. The family contract is also being developed extensively in all regions of the country. However, the "victorious march of contracting and cost accounting" still does not yield high productivity on the whole.

Managers and specialists of kolkhozes and sovkhozes and RAPO's [regional agro-industrial associations] should raise the level of organization for economic work and introduce cost accounting and contract brigades and teams more effectively and establish the conditions for their efficient operation. Contract collectives are formed at times without the necessary economic grounds and without taking the opinions of the workers who become part of them into account. And it is common knowledge that special attention was devoted to the extension of democratic principles in management at the January (1987) Plenum of the CPSU Central Committee. Contract commitments between contract collectives and farm managers are not being carried out, and wage problems have not been worked out sufficiently. Such brigades and teams do not exist for long, of course, and fall apart in the very first season, as a rule.

Based on the directions of the January (1987) Plenum of the CPSU Central Committee, agro-industrial committees and associations must critically analyze the assimilation of economic methods of management in each labor collective and establish specific steps for the shift to cost accounting and collective contracting everywhere. A formal approach, stereotypes and unorganized procedures are not to be tolerated in this important matter.

The conference in the CPSU Central Committee on 23 January this year directed attention to further improvement in the organizational and economic methods of management and to achievement of complete unity in planning for the agro-industrial complex. The normative method in working out the plans for purchases, the wage fund, capital investments, in relationships with the budget, and so forth requires development and elaboration.

The right granted to agricultural enterprises to sell up to 30 percent of the planned volume of fruits and vegetables grown at kolkhoz markets is not being utilized sufficiently. For the purpose of establishing favorable conditions for enterprises and organizations to shift to self-financing, the right of agro-industrial committees would have to be extended to establish retail prices not only for fruits and vegetables sold through stores in their jurisdiction, but for all types of agricultural output.

Thorough development of the economic incentive mechanism is necessary for the workers of all sectors and areas of the agro-industrial complex, chiefly the processing enterprises and procurement and trading enterprises and organizations. Solution of the problems of economic incentive for workers on farms in areas of unstable cultivation, where the crop depends to a large extent on weather conditions, cannot be put off.

The economic efficiency of the mechanism of integration links between agriculture and the processing industry and trade has to be increased.

Further improvement and development of of a single unified system of primary and bookkeeping accounting and reporting for all types of activity in the USSR Gosagroprom system will make it possible to introduce a unified procedure for financing and extension of credit for agriculture, industry, procurement

activity, trade and construction. Although the volume of statistical reporting has been reduced by one-half and bookkeeping reporting by 36 percent as much, the volume of work remains high (about 500 forms) and especially for intradepartmental statistics (about 170 forms).

Many managers of agroproms and associations are restructuring their work style and methods slowly and have not gotten rid of command and administration, and often there is interference by higher organs in the day-to-day and economic activity of agricultural and industrial enterprises. It was stressed at the conference in the CPSU Central Committee on 23 January 1987 that management organs should be deeply involved with questions concerning the economy, introduction of advanced new forms of labor organization and wages, advanced experience, personnel training, social problems, providing for planned organization, proportionality and balance in development of the agro-industrial complex, and the expansion of integration ties, but not with individual technological operations which come within the competence of farm managers and specialists.

The problem of shifting not only kolkhozes and sovkhozes, but the management organs for the entire USSR Gosagroprom system, and the RAPO's and oblast agroproms first of all, to cost accounting cannot be put off. These organs should be self-supporting and completely responsible for ensuring that their enterprises are not operating at a loss. "The trusts and enterprises under cost accounting," V. I. Lenin noted, "were established precisely to ensure that they themselves are responsible, and completely responsible, for seeing that their enterprises do not operate at a loss" ("Complete Works," Vol 54, p 150).

It is necessary to make a distinction between the functions of management organs on the one hand and the functions of kolhozes and sovkhozes on the other hand. RAPO specialists should not be involved with individual technological operations. The farm has plenty of specialists for this. They should concern themselves with problems of the economy, introduction of innovations in production, personnel training, providing for planned organization and proportionality in development of agro-industrial complexes and improving integration ties. Such a differentiation in functions should be strictly observed.

Reinforcing democratic principles and increasing the role of RAPO councils are an important task in improving management effectiveness under the new conditions.

"The RAPO council, which is made up of sovkhoz directors, kolkhoz chairmen, and managers of other organizations," M. S. Gorbachev notes, "is the principal organ of the association. The RAPO chairman and his staff carry out the will of the council." The RAPO should do everything possible to ensure effective utilization of each farm's potential so that all the output it has produced reaches the consumer's table. This is the principal task of the management and specialists of the association staff.

An important role in increasing the effectiveness of economic management methods belongs to the Law of the USSR on the State Enterprise (Association). The draft of the law, by extending centralized principles to resolve the most important tasks in developing the national economy, provides for reinforcement of economic management methods and broad utilization of full cost accounting and self-financing. It is aimed at further development of self-management and identification of the relationships between enterprises (associations) and state organs and management.

The activity of an enterprise under conditions of full cost accounting and self-financing is carried out in conformity with the principle of socialist self-management. The labor collective, which enjoys full rights as the boss at the enterprise, independently resolves all problems of production and social development. The gains and losses in the enterprise's work have a direct affect on the level of the collective's economic income and the welfare of each worker.

Consistent implementation of the Law on the State Enterprise (Association), in conjunction with the wide-scale combination of measures now being carried out in the economic area, will be a powerful accelerator to develop the economy in all sectors of the agro-industrial complex and will lead to qualitative improvement in other aspects of public life under the conditions of restructuring.

Organizational restructuring in the agro-industrial complex requires further improvement. Duplicative and parallel units everywhere have to be abolished, and the necessary integration must be achieved between kolkhozes and sovkhoses and the servicing and processing sectors of industry. The services of enterprises depend on the production cost of output and have a substantial affect on the economics of the farms being serviced. In 1986, services valued at over 26 billion rubles were provided by agricultural service enterprises. At the same time, the prices for work and services are not being revised in a downward direction. It was noted at the January (1987) Plenum of the CPSU Central Committee that success in restructuring will be determined decisively by how rapidly and thoroughly our personnel are imbued with an understanding of the necessity for revolutionary changes and how decisively, energetically and competently they will act. "The process of assimilation by personnel of the modern methods of management and approaches in work," M. S. Gorbachev noted, "is proceeding with difficulty and in contradiction, and is not being managed without painful manifestations and setbacks of the past."

Considerable work has been accomplished in 1987 under the guidance of party and soviet organs in studying problems related to the economy of the agro-industrial complex, cost accounting, intensive technologies, and advanced experience.

The state agro-industrial committees of union and autonomous republics, agro-industrial committees and associations, and managers and specialists of farms must seek to bring about complete application of the knowledge of agro-industrial production acquired by each worker.

Now, as noted at the conference in the CPSU Central Committee on 23 January this year, "the conditions have been established for important movement ahead--increasing labor productivity and increasing agricultural output." In order to accomplish the tasks that have been set, we must ensure an increase in the yield from the potential developed in the agro-industrial complex and from the resources being allocated to this sector. The main path lies through improvement in the management system and mechanism of economic operation, the shift to an intensive track, new production technologies and vitalization of the human factor, and reform of social conditions in the countryside.

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USE OF COLLECTIVE CONTRACT, COST ACCOUNTING REVIEWED

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 4, Apr 87 pp 3-11

[Unattributed article: "The Collective Contract and Cost Accounting Are Very Important Factors in the Growth of Labor Productivity in Agriculture"]

[Text] Important and critical tasks in increasing the production of all agricultural products face agriculture during the 12th Five-Year Plan. The efficiency of kolkhoz and sovkhoz production, especially the increase in labor productivity based on intensifying farming and animal husbandry, must be significantly improved.

As the 27th CPSU Congress pointed out and as the experience of many progressive farms in the country's different zones shows, the complete mastery of cost accounting [khozraschet] relationships and the introduction of the collective contract are acquiring primary importance.

The CPSU Central Committee decree entitled: "On Urgent Measures To Increase Labor Productivity in Agriculture Based on Incorporating Rational Forms for Its Organization and Cost Accounting" points out the great importance of these factors in the matter of raising labor productivity. The tasks of party organizations and soviet and economic agencies in carrying out this decree were discussed during a meeting in the CPSU Central Committee on 23 January 1987. In his opening address to the meeting, M. S. Gorbachev emphasized that the questions, which we are solving during the restructuring that is taking place and gathering strength, are of primary importance.

At the present time, the collective contract is the most perfect form of intraorganizational economic relations -- a form which is based on the mutual interest of the contractor (brigade, link, farm) and the customer (the leadership of a kolkhoz or sovkhoz) in the production of a larger amount of produce with the least amount of expenditures. The experience of kolkhozes and sovkhozes shows that brigades and links, who are working using the collective contract method, achieve higher indicators in work because contract principles of work establish favorable conditions for the labor of machine operators and other workers. Undefined responsibility is eliminated in them, the responsibility of the workers is raised, and personal and public interest are organically tied together. The introduction of a collective contract does not require additional capital investments, but permits an increase in the

yield of the fields, the productivity of farms and the efficiency of kolkhoz and sovkhos production to be achieved.

A total of 410,000 brigades, links and farms on the country's kolkhozes and sovkhos worked using the contract in 1986. They grew agricultural crops on 78.8 percent of the fields as opposed to 63.2 percent in 1985. The cattle population served by contract collectives grew approximately 1.5-fold as compared with the previous year. More than half of the cattle, 60 percent of the pigs and more than 80 percent of the sheep were assigned to them. A total of 72 percent of the kolkhozes and sovkhos are operating using intraorganizational settlement and more than 30 percent of the farms are using a check form of control. It is evident from this that the contract has been widely disseminated in agriculture and -- what is especially important -- contract subunits in many of the country's regions are operating more effectively and obtaining more produce with fewer expenditures of labor and resources. You see, it is a fact that, using the contract and cost accounting, many kolkhozes and sovkhos have now increased the production of agricultural products, lowered their costs and achieved high labor productivity.

Life shows that the farms, which have successfully applied the principles of the contract have bravely moved toward breaking the old organizational forms that hinder the effective use of the resources existing on kolkhozes and sovkhos and that bind the initiative of workers and kolkhoz members.

The Sovetskaya Rossiya Kolkhoz in the Rudnyanskiy Rayon of Smolensk Oblast began work to master the contract in 1983. The farm's board of directors and specialists performed serious preparatory work in the labor collectives. The training of personnel was organized. Questions concerning the formation of contract brigades and links were thoughtfully resolved on the kolkhoz, and cost accounting production targets were developed jointly with the members of these subunits. All plant-growing workers are now working under a collective contract. In 1986, the kolkhoz received 30.1 quintals of grain per hectare, 205 quintals of potatoes per hectare, and 10.1 quintals of flax fiber per hectare. When compared with the average annual level during the 11th Five-Year Plan, gross yield grew by 22.6 percent and labor productivity by 25 percent, and the increase in pay pushed considerably ahead. The level of production profitability reached 66 percent.

The work to introduce the collective contract on the Krasnaya Armiya Kolkhoz in the Rogachevskiy Rayon of Gomel Oblast began in 1981. At that time, a link for procuring fodder, which was composed of 12 people, was organized. In 1982, a link for growing corn was established; and in 1983, three potato growing links were transferred to a contract. In 1985, all plant-growing subunits and the complex for fattening calves were operating using the collective contract method. In 1986, three dairy farms and the farm directors and specialists were transferred to a contract.

The introduction of the collective contract permitted the gross yield to be increased by 41.4 percent during the 11th Five-Year Plan when compared with the 10th Five-Year Plan. In 1986, gross yield increased another 30 percent

and labor productivity by 18 percent, reaching 17,100 rubles per worker. The average monthly pay grew by 14 percent in 1986.

When compared with the 10th Five-Year Plan, gross receipts grew 2.1-fold and net profit twofold, reaching approximately one million rubles in 1986.

The CPSU Central Committee decree entitled "On Urgent Measures To Increase Labor Productivity in Agriculture Based on Introducing Rational Forms for Its Organization and Cost Accounting" has pointed out that -- among the different forms of collective contract -- intensive labor links and brigades, which are small in size and which have been given land, equipment and other means of production on a contract basis, have proven themselves better.

The work of the links from the Baturinskoye Experimental Demonstration Farm in Kurgan Oblast serves as an example of highly productive labor. Here, three links composed of three, four, and five machine operators were organized in 1986; they were given 870, 1360 and 1420 hectares of land, respectively, and a set of equipment necessary for growing grain crops. In the link headed by N. Borovik, the field load on a machine operator was 340 hectares; and in the section, where they work, it was 124 hectares. The wheat yield in the link was 31.7 quintals per hectare; in the section -- 28.2 quintals per hectare. Calculated on a machine operator in the link, 96,200 rubles of produce were received and 26,700 rubles in the section. The average monthly pay of a machine operator during the field period was more than 600 rubles in the link and half of this in the section. At the same time, the percentage of pay in the cost of the gross yield was 5.3 percent in the link and 9.8 percent in the section. Approximately the same results were obtained in the other links.

In the different zones of the country, there are now quite a few rayons where all of the farms are successfully mastering contract relationships and, on this basis, achieving a considerable increase in the yield of agricultural crops and cattle productivity and an increase in production efficiency and labor productivity.

The specialists of the Nisvizhskoye RAPO [Rayon Agro-Industrial Association] in Minsk Oblast are performing a great deal of organizational work to incorporate the collective contract. In 1986, all plant-growing subunits on the rayon's kolkhozes and sovkhoses operated using a contract. In animal husbandry, 100 percent of the cows and sheep, 74 percent of the cattle raised and fattened, and 68 percent of the pigs were assigned to contract collectives. The contract is being actively incorporated in repair shops.

The growth rates in the yield of agricultural crops and in the productivity of animals more than doubled during the years of the mass introduction of the contract (1984-1986). Labor productivity growth rates also increased. Whereas they were 3.2 percent during the years of the 10th Five-Year Plan, they were 8.7 percent in the 11th Five-Year Plan.

Last year, the grain yield in general for the rayon reached 40.4 quintals per hectare; that of potatoes -- 278 quintals per hectare; and that of sugar beets -- 363 quintals per hectare. In this regard, a fifth of the brigades achieved a grain yield of more than 45 quintals per hectare. The productivity of the

milk herd increased by 542 kilograms in comparison with the level of the 11th Five-Year Plan.

The farms in the Rezhevskiy Rayon of Sverdlovsk Oblast achieved definite results in increasing production and labor productivity and in decreasing costs based on introducing the collective contract and intraorganizational settlement. In 1986, all of the arable land in the rayon was being worked by contract collectives; and in animal husbandry, collectives using a contract serviced 85 percent of the cows, 73 percent of the calves and 61 percent of the pigs. Last year, the rayon's farms increased the grain yield by 24.5 quintals per hectare -- this is 18 percent higher than the level of the 11th Five-Year Plan; that of potatoes -- 212 quintals per hectare; that of vegetables -- 212 quintals per hectare; and that of mangel -- 452 quintals per hectare. The productivity of animal husbandry also grew. Milk yield per cow reached 3,185 kilograms; this is 29 percent higher than the average level of the 11th Five-Year Plan. The labor productivity of each worker engaged in production increased by 84 percent. Product costs decreased; in animal husbandry, they were 13 percent lower than the 1985 level.

The family contract is being widely disseminated. In the Kirghiz SSR, approximately 4,500 family collectives are working at growing vegetables, onions and tobacco. In the Armenian SSR, 4,400 people are working under a family or individual contract. Approximately 6.5 million sheep have been assigned to family links in the Uzbek SSR. The family contract is being extended in tobacco-growing on the Kamaris Sovkhoz in the Abovianskiy Rayon of the Armenian SSR. Of the 19 hectares of tobacco, 12 hectares have been assigned to members of 33 families at a rate of 0.25 hectares per person. The use of the family contract permitted the tobacco yield on the farm to be increased from 14.4 quintals per hectare during 1983-1984 to 47.5 quintals per hectare during 1985-1986.

The collective contract and intraorganizational settlement are inseparable. That is why the achievement of high final results is possible only on the basis of the widespread introduction of effective cost accounting in all production links. Without this, the guaranteeing of the planned production level, the increase in efficiency, the lowering of product costs and the obtaining of the planned profit are unthinkable.

There are quite a few examples of an effective and complex use of the contract and cost accounting in practice. At the same time, as inspection material in all regions shows, along with farms that have achieved a significant increase in agricultural crop yield, cattle productivity and production efficiency by introducing cost accounting and contract principles, there exist many kolkhozes and sovkhozes that are on a contract basis, whose work indicators do not improve from year to year.

According to VNIESKh [All-Union Scientific Research Institute for Agricultural Economics] data, the effect from introducing the collective contract throughout the country in general during the 11th Five-Year Plan is twofold less than the indicators which contract collectives, who are working well, are achieving.

Almost 90 percent of the arable land has been assigned to contract collectives on the farms of the Ukrainian SSR. The required effect, however, was not received in 1986 from this widespread use of the contract. The republic's kolkhozes and sovkhozes did not fulfill the plans for gross yield and profit; for the sale to the state of grain, oil-producing crops, flax fiber, fruits, and berries; and for labor productivity. Expenditures for the production of produce were 13 percent, or almost three billion rubles, above the planned ones.

The same situation occurred in the Uzbek SSR. Here, contract subunits work almost 70 percent of the arable land, but the required effect was not obtained. The plan for gross yield was fulfilled by 89 percent; and for profit -- by 90 percent. Expenditures for the production of produce were 15 percent above the planned ones. The plan for the sale of grain, raw cotton, fruits and vegetables and the labor productivity plan were not fulfilled.

Or let us take the Moldavian SSR. Here, 63.5 percent of the arable land is assigned to collectives using the contract, but the effect is also clearly insufficient. The plan for gross yield was fulfilled by 98.5 percent and that for profit -- by 98.6 percent. Expenditures for the production of produce were exceeded by 230 million rubles, or 11.5 percent. All told, the plan for the sale of oil-producing crops was fulfilled by 88 percent; that for sugar beets -- by 81 percent; and that for fruits and berries -- by 94 percent.

Labor productivity is a generalizing synthetic indicator; all aspects of farm production activity are reflected in it. However, the necessary importance is not being attached to this indicator on all kolkhozes and sovkhozes. As a consequence of this, the growth rates for the payment for labor rush ahead of its productivity on many farms.

During the 11th Five-Year Plan, for example the growth rates of labor productivity on the country's sovkhozes were, generally speaking, lower than the increase in payments for labor. These correlations, however, differ substantially. For example, on Estonian SSR sovkhozes, wages increased by 2.4 percent for each percent of increase in labor productivity during the 11th Five-Year Plan; and on Belorussian sovkhozes -- by only 1.1 percent. On the sovkhozes in the Uzbek SSR, Kirghiz SSR, Tajik SSR and Turkmen SSR, labor productivity decreased by 4-10 percent during the 11th Five-Year Plan when compared with the 10th Five-Year Plan, but wages grew by 10-19 percent.

In 1986, labor productivity in the public sector grew by 6.9 percent when compared with 1985, but pay -- by 3.6 percent. The outstripping growth of labor productivity was achieved for the first time in many years. In the Uzbek SSR and Turkmen SSR, however, the growth rates of labor productivity were, as before, lower than the growth rates in the payment for it. In 1986, the plan for increasing labor productivity was not fulfilled on the farms of the Ukrainian SSR, Uzbek SSR, Georgian SSR, Azerbaijan SSR, Latvian SSR, Kirghiz SSR, Tajik SSR, and Turkmen SSR; and its level was lower than 1985 in the Azerbaijan SSR and Turkmen SSR.

Life shows that the reserves for increasing labor productivity, which exist on farms, are enormous. Thus, on the average, a gross yield of 20,100 rubles,

calculated per machine operator engaged in plant-growing in contract brigades and links, was produced. On the Mir Kolkhoz in the Torzhokskiy Rayon of Kalinin Oblast, it was 60,000 rubles; on the Kolkhoz imeni Kirov in the Belozerskiy Rayon of Kherson Oblast -- 64,000 rubles; on the Druzhba Kolkhoz in the Sokulukskiy Rayon of the Kirghiz SSR -- 69,000 rubles; and on the Baturinskoye Experimental Demonstration Farm in the Shadrinskiy Rayon of Kurgan Oblast -- 75,000-95,000 rubles. These examples testify to the fact that many farms and rayons were not able to use all of the beneficial capabilities for increasing labor productivity even with the new management structure and new management mechanism.

The main reason for this situation was the serious deficiencies in the organizational work of many directors and specialists on farms and in USSR State Agro-Industrial Committee agencies.

First of all, it is necessary to pay attention to the fact that the requirements and basic principles of the contract are not being observed when organizing brigades and links. They are trying to squeeze the new ways to organize and pay for labor into the framework of the obsolete organizational forms.

Indeed, what kind of contract is there on the Probuzhdeniye Kolkhoz in the Orlovskiy Rayon of Orlov Oblast? Here, a tractor brigade composed of 47 machine operators appears as a contract one. It grows agricultural crops on an area of 2,616 hectares in accordance with a contract. Just as before, the brigade continues to perform general farm work and work in animal husbandry. As a result of the thoughtless work organization, many tractor operators are engaged in cultivating crops for no more than 40 days, and the arable land load per machine operator does not reach 60 hectares. This has led to a weakening of the actual connection of the machine operators' pay with the final production results and to constant violations in the operational and economic independence of the collective. Despite the fact that the brigade has already been listed as a contract one for five years, no improvement in its work has been achieved. Unfortunately, there are quite a few similar examples.

You see, however, the Belgorod conference on collective contract matters emphasized that it is important to guarantee the readjustment of the organizational structure and of all economic ties on the farms on the basis of cost accounting when shifting to a contract.

The main thing in this work is to improve the organization of the primary work collectives. Being interested in the final result, they are active champions of scientific and technical progress and incorporate new technologies and the other achievements of science, technology and progressive experience more rapidly. At the same time, the primary work collectives of a farm, being its structural subunits, do not function in an isolated manner, with no connection with and independent of the others.

The formation of a system of work collectives in the major and servicing production units and services of a farm establishes favorable conditions for increasing the work efficiency of each individual labor collective since its

place, functions and role in the production of products will be accurately delimited and regulated. This guarantees an integrated approach to solving labor organization questions.

When forming a system of work collectives, the main purpose is to create the most favorable conditions for the work of collectives in basic production by increasing the division-of-labor level. This means that it is advisable to free the subunits (brigades and links), who are producing the products, from functions that are unusual for them. Beside advantages of an organizational nature, this measure expands their capabilities for the more effective realization of collective material interest in the final results of their work.

The experience of many farms testifies that the freeing of plant-growing production brigades from functions, which are unusual for them, permits the arable land load calculated per one machine operator to be increased by 25-30 percent. When doing this, an increase in the quality of work, the regulating of labor organization and the use of work time are assured; and production process requirements are observed more strictly.

The effectiveness of contract collectives depends a great deal on their size. In farming agriculture, the most effective ones are subunits, to which land has been assigned for the complete rotation of crops. These brigades are considerably widespread in Belgorod, Nikolayev, Cherkassy, Khmel'nitskiy, Zaporozhye, Moscow, and other oblasts.

These subunits, however, have a large numerical composition of permanent collectives. At the present time, many farms have moved along the path of establishing brigades and links with a short crop rotation assignment as well as specialized crop rotations with a high saturation of the leading crops.

Specialized brigades and links with individual crop assignment are being established on the farms in the Volgo-Vyatka economic region. In doing this, additional crops are also assigned besides the basic crop with a consideration for assuring the complete employment of the workers. Mechanized links consist of six-eight people. As a rule, they are independent subunits.

In the task of incorporating the new forms for organizing and paying for labor, a special role belongs to the farm directors. The shift of the collectives to a contract requires a change in leadership style and methods, the transfer of a number of functions directly to the collectives, and the development of their independence. Only under these conditions is it possible to expect a display of initiative and creativity from each worker and kolkhoz member and, based on that, an increase in production efficiency. The work experience of Ye. A. Yakovlev, a Hero of Socialist Labor from Kalinin Oblast, clearly testifies to this. He began as a field-team leader on an experimental farm of the Flax Institute where he organized a collective contract. He obtained excellent results. In 1981, he was transferred as a brigade leader to the Mir Kolkhoz in the Torzhokskiy Rayon, which was lagging behind, and headed a brigade using a collective contract. At the end of the five-year plan, this low profit farm had already received two million rubles of profit. At the beginning of 1986, Comrade Yakovlev was elected chairman of the Put k

Kommunizmu Kolkhoz in this same rayon. He immediately organized cost accounting brigades using the collective contract. During the first year, the kolkhoz gathered 31 quintals per hectare of grain or 10 quintals more than during the previous years. The laying-in of fodder grew 1.5-fold, and the milk yield per cow increased by 800 kilograms. This is what a knowledge of one's job and a serious attitude toward the collective contract and cost accounting means.

One must specially point out that production process specialists and engineers on many farms are not working on questions concerning the introduction of the collective contract; this work is being completely shifted to the economists. You see, however, the correct organization of production and labor is the main task of the process engineers. Without this, it is difficult to calculate what required return will be obtained from incorporating the intensive production processes that have recently been receiving more and more dissemination.

The successes of the first brigades and links to use the contract was determined to a great deal by the fact that people, who were enthusiastic about this matter and who were capable organizers of production, stood at the head of them. With the mass introduction of the contract, specialists and machine operators, who were insufficiently prepared for this role, began to direct many brigades and links. What is especially bad is that the necessary work to improve their knowledge and the qualifications, which are required under modern conditions, is not being performed with these cadre. Here, evidently, you cannot manage without a short-term retraining of cadre. In Kharkov Oblast, for example, they conducted training according to a 24-hour program and then certified the students. Each student had to calculate the transfer of one of the brigades to a contract and compile a cost accounting production target for it as a course project. Of the 429 specialists that underwent training, 82 individuals altogether did not cope with this work and 180 completed it in a so-so manner. In this regard, a direct connection is observed between the specialist's level of knowledge and the state of affairs in incorporating the contract on the farms. The major portion of the students, who did not manage the control work, were from Bogodukhovskiy, Sakhnovshchinskiy and Velikoburlukskiy rayons where the work to incorporate the contract is being done unsatisfactorily.

One of the main principles of the contract is the collective payment of the brigade and link members for their final results in accordance with the evaluations of the output. The prices for the products are now being estimated on farms based on the annual plan or the norm for producing products and the wage tariff fund, which had been increased to 150 percent. The specific size of the increase in the wage tariff fund is stipulated on the farm in agreement with the trade union committee within the limits of the wage fund. In this regard, the tariff fund is increased to a greater degree for collectives that have achieved higher yield and productivity indicators. The production norm for the brigade and link collective is also worked out on the farm in accordance with the specific production conditions. The norm should be capable of achievement, but rather strenuous; and the amount of the fund increase should correspond to the achieved harvest and productivity of the animals. It would seem that, under approximately equal production conditions,

product prices should be close. This, however, is not always the case in fact. In the Yuryev-Polskiy Rayon of Vladimir Oblast under identical norm yields, they pay 23.5 kopecks for one quintal of winter wheat on the Yuryev-Polskiy Sovkhoz and 38.7 kopecks on the Entuziast Sovkhoz. On the Rassvet Kolkhoz and the 40-let Oktyabrya Kolkhoz in the Gus-Khrustalnyy Rayon of that same oblast with an equal norm yield of potatoes, they established 22.2 kopecks for one quintal during the first rating and 49 kopecks during the second.

On the Kzyl-Oktyabr Sovkhoz in the Keminiski Rayon of the Kirghiz SSR, the unjustified overstating of prices because of a decrease in the plant-growing production norm led to 13,300 rubles of additional product payments being distributed to the brigade when the production quota was fulfilled by 77 percent. During two years of working under the contract, the average monthly wage grew by four percent when labor productivity decreased by 16 percent.

In plant-growing, where the work period and the period of production and obtaining products do not coincide in time, the distribution of collective earnings, which are calculated based on the output, can only take place at the end of the agricultural year. This generates the need to advance money to the members of the contract collectives before the harvest.

Direct individual piece wages for the amount of work performed is excluded under the contract since it contradicts the very essence of the contract, breaks down the collective, strengthens the desire to increase the volume of work -- often by additions -- to the detriment of quality, and does not guarantee collective payment for the final result of work.

Two types of advances can be used before the calculations based on the output -- periodical or in the form of a collective piece wage for a single detail. Periodic advances under the contract are the most progressive. They satisfy the essence of contract relationships since all of the positive aspects of the collective's work under the contract are displayed more clearly and more fully with their introduction.

In order to insure the rational use of assets to pay for labor during the stage of advances, their size must be determined for the brigade (link) workers by the total of the tariff fund that had been planned for the collective for its fulfillment of the production program.

There is another aspect of advances that is very important -- the establishment of the size of the advance for each member of the contract collective. It is necessary to establish an advance for a worker that would correspond to his qualifications and contribution to the achievement of the final work results -- the yield of the agricultural crops.

In animal husbandry, the most widespread shortcoming, when incorporating a contract, is the fact that the ratings for the payment of the workers' labor based on output are established for each category of worker -- separately for milk maids, cattle-farm workers, metal workers, etc. They forget that the basis for the contract is collective payment for final results.

That is why the time has come to organize material and moral incentives so that they will expand the worker's interest towards achieving the highest results. Conditions for this exist now. They have been established by the latest party and government decrees.

The new management mechanism is aimed at the widespread introduction of intraorganizational settlement and is based on it. In the Kazakh SSR, Georgian SSR, Azerbaijan SSR, and Armenian SSR, however, intraorganizational settlement is still not being used on many farms. Moreover, there is still quite a bit of unimaginativeness and formalism in this matter. On many farms, they are confining themselves only to the development of unwieldy production targets for brigades and farms.

The local agencies of the USSR State Agro-Industrial Committee still work too little on improving economic management methods, incorporating effective cost accounting, and mastering counterexpenditure methods for managing the economy.

According to official data, for example, on the farms of the Zherdevskiy RAPO in Tambov Oblast cost accounting and the contract have been introduced into all sovkhozes and kolkhozes. At the same time, the current expenditures per 100 rubles of product increased by 37 percent during recent years. On this rayon's Osinovskiy Sovkhoz, 10 of the 13 cost accounting subunits allowed an overexpenditure of assets totaling 590,000 rubles during the first 10 months of 1986. The cost accounting targets are being relayed in a formal manner to the production subunits on the rayon's farms without considering the results that have been achieved and their capabilities. This can explain the fact that a 1.7-fold increase in the cost of a quintal of milk, a 2.3-fold increase in wool, and a 26 percent and 7 percent increase in the live weight of sheep and calves, respectively, was planned in 1986 for the Kolkhoz imeni Karl Marx.

In 1986, actual expenditures exceeded planned ones on the kolkhozes and sovkhozes in the Kazakh SSR, Azerbaijan SSR, Uzbek SSR, the RSFSR, and the Ukrainian SSR. More than 60,000 agricultural enterprises completed last year with a loss.

Experience shows that at the present time one of the most important conditions for improving production efficiency is the widespread use in kolkhoz and sovkhoz practices of payments for labor from gross receipts.

In this case, the amount of the material incentives depends not only on the amount and quality of produced product but also -- and this is very important -- on the expenditures to produce it. That is why the payment for the brigade and link collective's labor from gross receipts is the most reliable counter-expenditure mechanism. Essentially, it is a cost accounting one that directs the work of collectives toward achieving high final results.

This procedure for paying for labor is being used on a number of kolkhozes in Moscow, Dnepropetrovsk, Kurgan and Crimea oblasts and Stavropol and Krasnodar krays.

Good results in work have been achieved on the Zavety Iliche Kolkhoz in the Krasnogorskiy Rayon of Moscow Oblast where they have introduced effective

intraorganizational settlement and a check form for controlling expenditures and payments for labor from general receipts. Savings conditions are being strengthened step by step on the kolkhoz. Savings incentives are becoming more and more effective. The breeder collective, directed by S. I. Venzik, saved 33,000 rubles in 1986, of which 10,000 rubles were expended to encourage the kolkhoz members. The incentives were substantial, visual and easily understood by each worker. How did they affect the final results?

The milk yield per cow on the kolkhoz has grown by 600 kilograms during the last five years. In 1986, 5,128 kilograms of milk were received from each cow. The farm sold the state 3,700 tons of milk and 235 tons of meat. This was 10 percent and 20 percent, respectively, more than the average annual level of the last five-year plan. The net profit of the kolkhoz exceeded 1.6 million rubles.

The effective introduction of modern forms for organizing and stimulating labor is based on economic management methods. However, the new economic conditions, which have recently been created, are not being used skillfully everywhere.

The CPSU Central Committee and USSR Council of Ministers decree entitled "On Further Improving the Economic Management Mechanism in the Country's Agro-Industrial Complex" has prescribed fundamentally new and effective material incentive measures for workers on sovkhozes, in RAPO, in oblast and kray agro-industrial agencies, and in institutions and organizations servicing agriculture.

These measures by themselves, however, will not provide the necessary effect without their creative application to specific production conditions. Unfortunately, many farm, RAPO and oblast agro-industrial agency directors and specialists have still not learned this simple truth. Otherwise, how can one explain the fact that in Ivanovo Oblast, for example, the rayon agroindustrial associations up to the December 1986 had not approved the rates for paying for the labor of farm leading workers, specialists and employees and the amounts of their bonuses; and the oblast agro-industrial committee -- the rates of payment for similar categories of workers in RAPO and the amounts of their bonuses.

Up to the end of 1986, the awarding of bonuses to cost accounting subunit collectives in an amount of up to 70 percent for saving direct expenditures had not been introduced on the oblast's farms and a procedure for compensating for overexpenditures of resources had not been defined. The new conditions for granting bonuses to directors, specialists and employees for supplying kolkhozes, sovkhozes and other agro-industrial complex enterprises with the necessary material resources and for fulfilling contract obligations in a qualitative manner and to the work collectives of these enterprises for the timely and qualitative fulfillment of the tasks, which had been stipulated for them in accordance with contract obligations, have not been introduced in the absolute majority of repair technical enterprises, agrochemical and energy service subunits and supply depots.

The important measures for improving the organization of material incentives, which have been prescribed by the CPSU Central Committee and USSR Council of Ministers decree entitled "On Further Improving the Economic Management Mechanism in the Country's Agro-Industrial Complex," permit -- as never before -- the direct dependence of the pay level of kolkhoz members and sovkhoz, RAPO and oblast and kray agro-industrial committee workers on the amount and quality of products produced and on the growth of production efficiency to be assured as never before.

The widespread use of progressive experience in working using cost accounting and progressive forms for the collective organization of labor and its payment is now becoming a very important condition for increasing the productivity of social labor and for fulfilling socialist obligations in honor of the 70th anniversary of Great October.

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ROLE OF PROCUREMENT PRICES AS QUALITY INCENTIVE

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[Article by N. Korina, candidate of economic sciences, and S. Kuznetsov, graduate student: "Consumer and Procurement Prices"; published by way of a discussion]

[Text] Increasing product quality is an objective general law and results from constantly improving the means of production and the quality of work. In this regard, increasing product and work quality represents the most rational form for the economy's intensive development. The CPSU Central Committee political report to the 27th party congress pointed out: "It is not enough to say that it is our closest and largest reserve. Today, it is impossible to accelerate scientific and technical progress without high quality."

The present level in the development of the socialist society's production forces and the economies of the branches in the agroindustrial complex and its central link -- agriculture -- call for a new approach to the problem of controlling the processes for improving product quality.

The most important link in controlling quality is the system of standardization and procurement prices. In accordance with the standards regulating the quality of agricultural products, its accounting is carried out by means of procurement prices differentiated by commodity and pomological varieties, categories, fat content, and other indicators. In addition, a system of markups and price reductions, depending on whether the quality indicators exceed or are lower than the prescribed base norms, is being used to account for a number of agricultural product consumer qualities.

Besides markups for procurement prices aimed at stimulating an increase in quality, markups stimulating an increase in production volume, markups to the procurement prices of products that are sold to the state by low profit and unprofitable farms located under the worst natural, climate and economic conditions; markups for certain periods for selling products to the state; and others are in effect. All of them closely interact within the overall system of procurement prices. In this regard, the economically sound alignment of their levels has fundamental significance since the effect of one type of markup can be neutralized by the prevailing activity of another.

An analysis of the economic condition of kolkhozes and sovkhoses for the period 1983-1985 shows that the profitability of agricultural production would have been low, kolkhozes would have been unprofitable, and animal husbandry on sovkhoses would have been unprofitable without the payment of markups for products sold by low profit and unprofitable farms and for the sale to the state of products above the average level achieved during the previous five-year plan (Table 1.)

Table 1. Profitability of Producing Agricultural Products Sold to the State With and Without a Consideration for the Paid Markups to Procurement Prices During 1985

| Profitability, % | | | | |
|------------------|------------------------|---|--|--------------------|
| | Considering Markups | Not Considering Markups | | |
| | | For exceeding the average level of the 10th Five-Year Plan | For low profit and unprofitable farms | Without markups |
| <hr/> | | | | |
| Kolkhozes | | | | |
| Total | 11.3 | 1.9 | 1.4 | -7.9 |
| Including: | | | | |
| Plant growing | 10.2 | 3.2 | 8.0 | -2.8 |
| Animal husbandry | 11.9 | -0.7 | -1.6 | -10.3 |
| <hr/> | | | | |
| Sovkhozes | | | | |
| Total | 20.4 | 13.4 | 8.7 | 1.7 |
| Including: | | | | |
| Plant growing | 31.8 | 21.4 | 27.2 | 16.8 |
| Animal husbandry | 17.7 | 11.5 | 4.3 | -1.5 |

The information cited in Table 1 shows that the two main types of markups play an essential role in the economy of kolkhozes and sovkhoses.

The total, which was paid by a 50 percent markup to all types of agricultural products from 1981 to 1985, grew almost threefold. This testifies to the growth in the amount of procured products in general. However, the increase in the procurement of products with high quality is insignificant, and there is a lowering trend for individual products.

When addressing the history of the introduction of a significant portion of the different types of procurement price markups, one can point out that all of them were originally used as a temporary measure. This was explained by the expected decrease in the unit cost of agricultural products in the future. However, as many years of experience showed, a decrease in cost not only did not occur but a substantial growth in it was observed. As a result, a significant portion of the different types of markups was included in procurement prices during the next review.

Experience has also shown that, despite the effect of different types of markups, the profitability level of agricultural production, especially that of animal husbandry, is low, and there exists considerable unprofitability in some branches during individual years. This testifies to the fact that procurement prices were not sufficient to compensate for the socially required expenditures of labor and that the markups to them fulfilled not so much a stimulating function as they served as a source for entering the assets required for carrying out expanded production in agriculture.

Thus, the markups paid for products sold to the state by low profit and unprofitable farms and also the 50 percent markups to the prices for products sold above the level achieved during the previous five-year plan, compensated and continue to compensate for the deficiency in procurement prices, which is contained in their separation from the socially required expenditures of labor.

The major portion of the all-union state standards for agricultural products was basically formed during a time when the task of increasing production volume had been put in first place. In connection with this, those quality indicators, which were considered when determining production volumes and product purchases (moisture, sweepings impurities, the presence of dirt, etc.), were first of all reflected in the standards.

At the same time, a number of paramount quality indicators, for example, the content of useful substances in this or that product, were not considered at all by the all-union state standards or were not fully considered. The markups, which are being paid for quality, compensate for the second deficiency in procurement prices which consists of the fact that they do not fully reflect (or consider) the consumer qualities of agricultural products.

At their economic base, all types of markups have a temporary nature today, which flows -- from our point of view -- from the imperfection of the procurement prices themselves in general. That is why the bringing of them closer to the cost basis with a more accurate reflection of consumer qualities should become the main line avenue for increasing the stimulating role of procurement prices in improving the quality of agricultural products. The latter determines one of the main principles in the approach to improving the procurement price system and reorienting price formation toward a complete accounting of the main consumer qualities in agricultural products -- the greatest content of the useful substances, for whose sake their production is being carried out, in them. This requires a simultaneous improvement in the standards system.

In our view, it is advisable to establish quality markups for the basic procurement prices which take into account the recognized level of the socially normal quality of the products, but a level that exceeds it and therefore requires additional expenditures of labor. Products with this increased quality must serve as an example for future production when the basic mass of produced products, which will correspond by that time to the socially normal quality level, is raised in its turn to its quality level.

Price reductions to procurement prices must be carried out in the event of a low product quality level that does not correspond to the normal standard, i.e., when society is not able to recognize all of the individual expenditures embodied in it.

Thus, the determination of its correlation with the use value category, which is realized under the specific conditions of use and which emerges in the role of a cost carrier, is the starting point for establishing the product quality level. In this connection, the need for an accurate determination of an average socially normal product quality level, which corresponds to the present socially normal conditions for its production, becomes evident.

During the initial stage of measures to improve the stimulating role of procurement prices in raising the quality of agricultural products, it is important to insure a scientific and economic regulation of the system for all types of markups and price reductions and a procedure for their payments and approval and to achieve an interconnected and economically sound correlation of the levels of all types of markups and price reductions with each other. The inclusion of a significant portion of the markups in the basic procurement prices may be the next measure.

Grain -- the basic source of plant protein, including irreplaceable high-molecular nitrogen bearing substances and amino acids -- is, as is known, the most important agricultural product. Despite the growth in the production of grain in general, a significant shortage of plant protein exists in the country. In this connection, increasing the production of grain is the key national economic problem.

The country's natural and climate conditions stipulate the primary cultivation of such grain crops as wheat, rye, oats, etc., among which wheat is the most widespread. It occupies the highest share in the country's grain economy. At the same time that total purchases of grain increased by 57.3 percent in 1985 when compared to 1960, the increase in the amount of wheat purchases was only 12.8 percent for that same period. This naturally led to a decrease in its percentage within the overall volume of purchases. A trend toward a decreased percentage of gluten content in the wheat from individual regions, where it is cultivated, was noted at the same time.

The deterioration in the quality characteristics of the wheat was aggravated by a reduction in the production and procurement of high-price varieties of it. This led to an increase in the shortage of plant protein in the country and in grain purchases abroad. However, substantial structural changes for the better had already occurred in 1986 in the production of wheat by types. Thus, the procurement of strong, valuable and hardy wheat, which corresponded to the standards, reached 30 million tons as opposed to 20 million tons in 1985, and an average of 15 million tons for the years of the last five-year plan (1).

At the same time, one of the considerable reserves for increasing grain production remains, as before, the further improvement of its quality, especially the improvement of its gluten content -- the main consumer quality.

Within the structure of all of the wheat produced in the country, the percentage of soft ranges up to 50-60 and more (for individual years.) It is one of the main sources of plant protein; in this regard, different varieties of soft wheat contain a different amount of protein. Meanwhile, the standards, which have been developed for soft wheat, consider moisture, sweepings impurities, natural weight and several other quality indicators. The protein content, the main consumer quality of this variety of wheat, is not considered at all. In accordance with this, procurement prices with markups and price reductions are constructed for soft wheat without considering the main quality indicator -- the presence of protein in it. This does not stimulate the production of soft wheat with an increased protein content.

In our opinion, it is necessary to introduce a further improvement into the system of state standards and prices for soft wheat along the lines of regulating and taking into account the presence of protein in it according to a definite scale. Without a doubt, this would interest the farms in the production of soft wheat with an increased protein content and would provide an opportunity for bringing procurement prices closer to the socially required expenditures with a consideration for the quantitative determination of the main consumer quality of the final grain production product in the different rayons growing soft wheat. This latter circumstance could insure a more efficient distribution and specialization in the production of this important agricultural crop.

In addition, it is necessary to point out that the procurement prices for soft wheat serve as a base for establishing the procurement prices for strong wheat. This additionally stipulates the need for a complete and accurate accounting of its consumer qualities within the price formation system. Strong wheat is paid for using the procurement prices for soft wheat with markups depending on the gluten content: A markup in the amount of 10 percent is paid for wheat containing no less than 23 percent gluten; 30 percent -- for wheat containing from 28 to 31 percent gluten; and 50 percent -- for that containing 32 percent and higher.

In our view, the cited differentiation in markups depending on the gluten content in strong wheat has not been sufficiently perfected. Under this procedure for paying markups for procurement prices, it turns out that farms, which are producing strong wheat with a gluten content of 32 percent and more, receive, first, an identical relative (percentage) amount of markup although the gluten content can be significantly different and, second, the expenses for producing strong wheat with an increased gluten content grow progressively. As a result, a portion of the farms lose considerable sums of assets and this does not build an interest in them to increase the production of strong wheat with a maximum gluten content.

In this connection, it would be advisable to introduce a more fractional differentiation in the markups to strong wheat procurement prices. In this regard, markups to procurement prices can adequately grow both in the increase of gluten content and of the markup percentage when there is a gluten content of from 23 to 31 percent. Since the increase of gluten in strong wheat, especially after achieving a certain level, is accompanied by a certain decrease in yield and, correspondingly, by an increase in production costs, it

is advisable to establish markups for procurement prices -- beginning with a gluten content at a level of 32 percent -- in a progression that corresponds to a one percent increase in gluten and differentiates within the limits of the total assets allotted for these purposes. For example, the scale for paying markups for an increased and growing gluten content in strong wheat can appear as shown in the table based on our approximate calculations.

| Gluten, % | Markup for the soft wheat procurement price, % | Gluten content, % | Markup for the soft wheat procurement price, % |
|--------------|--|-------------------|---|
| No less than | | | |
| 23 | 10 | 32 | 32 |
| 24 | 12.5 | 33 | 35 |
| 25 | 15.0 | 34 | 39 |
| 26 | 17.5 | 35 | 42 |
| 27 | 20.0 | 36 | 50 |
| 28 | 22.5 | | |
| 29 | 27.5 | | |
| 31 | 30.0 | | |

It is advisable to expand the fuller accounting of quality in the level of prices and markups to them to other types of agricultural products.

The percentage of products with high quality for such agricultural crops as sunflowers, vegetables, potatoes, and sugar beets, within the total amount sold by kolkhozes and sovkhoses to the state, is not high. Thus, the percentage of sugar beets with a sugar content higher than the base norm was about 34 percent of its total sales volume to the state in 1985.

Along with this, the 50 percent markup to procurement prices for exceeding the average level compared with the previous five-year plan is being paid at the present time for products of any quality. This markup is necessary, but one cannot fail to see that it is building an interest in the farms only in increasing production volumes. This is sometimes being achieved at the expense of raising quality. Let us illustrate this using state purchases of sugar beets as an example.

A whole series of markups and price reductions to procurement prices is being used to stimulate an increase in the production volume and an improvement in the quality of sugar beets. The stimulating functions of all the types of markups and reductions in the set must insure a national economic effect that consists of increasing the amount of the end product -- sugar -- with a decrease in expenditures on its production. However, this is not occurring in practice.

The trouble is that the markups and reductions, which are in effect for sugar beet procurement, are not sufficiently interconnected.

The plants' acceptance and payment of sugar beets considering their sugar content should occupy a special place in the system of measures to improve sugar content. The computation of markups to procurement prices for increased sugar content and of reductions for lowered sugar content is being done for each 0.1 percent above (beneath) the base norm.

A 50 percent markup to the purchase price for exceeding the sales volume achieved during the previous five-year plan builds considerable interest in the farms to increase volume indicators but the stimulating effect of procurement prices with markups for qualitative product parameters is less significant. Thus, in 1985 for each ton of sugar beets sold to the state above the level achieved during the previous five-years, the farms received from 22 to 29 rubles (depending on the republic) in addition to the procurement price as opposed to 3.7 rubles for a ton of sugar beets sold with an increased sugar content. The percentage of additional payments in the RSFSR in 1985 for increased sugar content was 1.8 percent or 2.8 rubles per ton within the overall earnings from sugar beets. At the same time, the percentage of 50 percent markups to the purchase price for exceeding the average level of sales to the state when compared with the previous five-year plan was 11.9 percent or 29 rubles, calculated per ton, within the total volume of earnings, i.e., 10.4-fold more. The situation is similar in the other republics.

In this regard, a persistent trend toward lowering payments for the quality indicators of sugar beets is observed not only when calculating per ton but also when calculating per unit of land area. Whereas the markup for increased sugar content was 5.1 rubles per ton and 119 rubles per hectare sown with this crop for the USSR as a whole in 1983, these figures were 3.7 rubles and 90 rubles, respectively, in 1985, i.e., they decreased by 73 percent and 76 percent. This information shows that the economic incentives for increasing the production volume of sugar beets considerably exceed the economic interest in increasing its quality, i.e., increasing sugar content.

In 1985, the country's farms sold 10,394,000 tons of sugar beets above the average level achieved during 1976-1980. Proceeding from the total of 50 percent markups, the state's additional expenditures for the production of sugar from this amount of beets was approximately 163.4 million rubles allowing for the cost of sugar based on wholesale prices, cakes and syrup.

The dominating effectiveness of the markups, which are paid for increasing the sales volume of sugar beets, and the cited calculation of the additional expenditures of the state due to this factor point out the need for a step-by-step change in the procedure for paying these markups.

During the first stage, it would be advisable to pay this type of markup to procurement prices not only for exceeding the average level of sugar beet sales volume but also for exceeding the base level of sugar content. This procedure for paying a 50 percent markup to procurement prices would stimulate to a greater degree the optimum correlation between increasing sugar beet production volumes and raising their sugar content.

The levels of the markups and reductions themselves for exceeding and lowering the basic sugar content norm are at variance with each other. Payments of markups to the purchase price calculated at four rubles per ton are stipulated for each percent the sugar content exceeds the basis one, but reductions in the procurement price in the event sugar content is lowered with respect to the basis one are calculated at two rubles per ton of sugar beets.

The increase and decrease of the sugar content for an identical amount cause an equivalent change in the level of the sugar plants' work indicator -- the output of a quantity of sugar. That is why it seems advisable to make the amount of the reduction equal to the amount of the markup for the same percent of increase or decrease in the sugar content of the beets with respect to the basis norm.

The suggested alignment of the size of the markup and decrease would lead to the strengthening of material responsibility for the sale of products with a decreased quality.

Thus, the improvement of procurement prices, which stimulate an increase in the quality of sugar beets (during the first stage) consists of bringing all types of markups and reductions to an economically sound level in their alignment. This will guarantee the mutual coordination of the economic interests of the partners in the sugar beet subcomplex and raise its effectiveness in general. This will also contribute to national economic interests. The mentioned measures can become the first and preparatory stage on whose basis it would be possible to move in the future from the system of markups and reductions to procurement prices for sugar beets to direct payment for the sugar content in them.

The improvement of procurement prices with markups and reductions should also be carried out in a similar way for other agricultural products, for example, sunflowers, whose payment and production stimulation it is advisable to carry out based on the production of oil; fruits; and vegetables, especially for processing purposes -- based on the output of dry substances, etc.

It does not matter to society with what expenditures this or that production volume is produced. Hence, it would be advisable to shift to a system for considering, planning and evaluating the produced agricultural product not only in physical weight but also in units of consumer qualities. In this connection, in our opinion, the further improvement of the system for standardizing procurement prices should consist of classifying the qualitative indicators of agricultural products based on the degree of their social significance, fuller reflection of consumer qualities that are responsive to the present requirements on a socially normal quality level, their regulation in all-union state standards, and -- on this basis -- the complete consideration of the main consumer product qualities in procurement prices.

FOOTNOTES

1. PLANOVOYE KHOZYAYSTVO, No 1, 1987, p 37.

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FAMILY CONTRACT IMPLEMENTATION IN VARIOUS AREAS VIEWED

Contract System in Kuban

Moscow SELSKAYA ZHIZN in Russian 6 May 87 p 2

[Article by P. Burlyayev, machinist, Kolkhoz imeni Kalinin, Krasnodar Kray: "With Economically Responsible Concern": Kolkhozes and Sovkhozes of Krasnodar Kray Have Concluded 29,660 Contracts With Farm Families for Production of Various Field and Farm Products; first five paragraphs are source introduction]

[Excerpts] The thorough development of family contracts is required by the CPSU Central Committee decree "On Urgent Measures to Improve Labor Productivity in Agriculture Based upon the Introduction of Rational Forms of its Organization and Cost Accounting [khozraschet]." This form of collective contract is becoming increasingly widespread in the most diverse regions throughout the country. The successful use of family unregulated units gives farms greater economic advantages. As a rule, small family collectives, bringing relatives together, are becoming a very effective independent production cell. Considerable increases in labor productivity are obtained without any additional investments.

In family collectives there is no need to use KTU [labor participation coefficients] or any other methods for labor measurement. This is quite an important quality of this form of contract.

Often children go through a school of labor education together with their parents. It is impossible to overestimate the huge significance which parents' love of labor and responsible attitude to their concerns provides for boys and girls.

Family contracts make it possible to enlist into active work pensioners, housekeepers and other people who, for various reasons have not been able to work on fields or farms, but who wish to be useful to society. This is also its great advantage.

Family contracts are more confidently spreading everywhere. At the same time, there are quite substantial difficulties in this form for organizing labor. They must be commented upon. Today we examine how family labor collectives are coming into being and what is still hindering use of this method's advantages.

In the Kuban the family contract has traditionally played a major role in the production of grapes, silkworms and tobacco. Now this form of labor organization and payment has obtained a new impetus. Farms in the kray have signed 29,660 contracts with rural families. These are the basis for growing 22,900 hectares of produce, feed and other crops. Thousands of kolkhoz farmers, sovkhoz workers and pensioners take care of 24,000 young cattle, 36,000 hogs and as many sheep.

I know that the family contract has become widespread in Timashevskiy Rayon. It has now become an important support for the Kuban Agro-Industrial Combinat. Forms of family contracts are quite diverse. Families are given plots of land, on which rural inhabitants grow various products. Cattle, hogs and sheep are fed on kolkhoz and sovkhoz animal farms and near farmers' houses. Contracts have been signed by 755 families here. They grow crops on 711 hectares, including 91 hectares of produce, 31 hectares of feed crops and 374 hectares of corn and sunflowers. Also, 400 hogs and 110 cattle are raised under such contracts. Several people service apiaries and raise silkworms.

Great attention is given to family contract in Vyselkovskiy Rayon. At our Kolkhoz imeni Kalinin in recent years much has been done to increase agricultural production and strengthen the economies of the kolkhoz and each family. All our sectors are operating profitably, labor productivity is steadily increasing and costs declining. The introduction of family contract is an important direction in work. Last year at our kolkhoz 104 families worked under contract, feeding 253 hogs. Thus, each family took care of 2-3 animals. Contracts were signed by families of kolkhoz farmers, pensioners and rural intelligentsia. The kolkhoz sold, at production cost, each family 400 kilograms of mixed feed per animal. The farm uses 6.8 quintals of feed units per quintal of animal weight gain.

Where do the feed savings come from? Use is made of household resources -- food and garden wastes and, of course, products obtained as payment in kind. In addition, each family uses its household plot to grow feeds and other crops and harvest hay from unutilized land, inaccessible areas and forest shelter belts.

All our farmers give family contracts their due value. More than 200 kolkhoz families are working under contract, taking care of more than 600 hogs. About 1,000 cattle will be raised under contract. Taking last year's experience into account, there have been several changes in the organization of contracts. They have become more stable and provide more income.

Many kolkhoz farmer families have signed contracts for raising calves. Also, contracts have been signed to grow produce. Seven families are in the link to which all land for such crops is attached. They do all manual work and will gather the harvest. Members of this link work under contracts. Each has a monthly advance, 80 percent of the value of all work done. The final

settlement is after the harvest. At the year's end 25 percent of above plan output will be distributed as payment in kind.

Payment Complaints

Moscow SELSKAYA ZHIZN in Russian 6 May 87 p 2

[Letter from the Shved family (Ustima Ilinichna, Kirill Pavlovich, Lidiya Kirillovna), farmers at the Pobeda Kolkhoz: "The Link Is Offended"]

[Text] This is our second complaint to SELSKAYA ZHIZN. After the first one people from the oblast and rayon came to check it out, but nobody really understood the situation. When we were not paid at all for May 1985, we repeatedly turned to Nikolay Kirillovich Yesman, the head of our animal farm. Later we went to Anatoliy Albertovich Khaletskom, the chief zootechnician. We got nothing. We went to Grigoriy Yakovlevich Kazachk, kolkhoz chairman. He said, "Go do your job and we will look into it." Nobody did look into it. We had to go to Vladimir Anisimovich Mironovich, first secretary of the party raykom. After this a reviewer came. We asked his family name and he told us one, but we later learned that this was not his. As we later found out, he was Vasilii Danilovich Stakhovskiy, senior zootechnician at the RAPO. We sat down and talked with him, but did not see him again. He did not investigate anything.

We were still being deceived. Once the zootechnician told us. "It turns out you still need to be paid more than 100 rubles." We still have not received the money. Later we were not paid for two tons of weight gain. It was simply "lost". When the inspector from Gomel reviewed our complaint he found these two tons. How were they lost?

Our cattle are not weighed monthly, but only four times a year. Weight gains are paid by an advance. Later, after reweighing, we often had not earned the advance. This is not only due to feed shortages, but also to bad accounting. In Yuriy Antonovich Burlevich's link, where the final feeding of bull calves was done, there were no reweighings right up until the animals were delivered to the meat combinats. We asked Khaletskiy how he determines cattle weight gain in order to pay link members for their labor. "By rations." The specialist answered.

Earnings in a link are high, but not for us. Brigade leader Olga Konstantinovna Yesman gave all privileges to Burlevich's link, as her sister and brother-in-law work there. Good conditions have been created for them. They have yeast and meal, but we have only 2 kilograms of rye straw, corn silage and hay per head. Labor is paid for weight gain.

We decided to tell the paper everything. Because we did a housecleaning we were punished by being deprived of bonuses.

Correspondent Replies

Moscow SELSKAYA ZHIZN in Russian 6 May 87 p 2

[Commentary by G. Krasnoperov: "Commentary by a Correspondent"]

[Text] Lelchitskiy Rayon, Gomel Oblast--After visiting the Pobeda Kolkhoz I was convinced that the family link's complaints were justified. The contract was not working. Why?

A contract is where people are assured of all working conditions, are given the resources they need and their earnings depend upon final output. However, even managers and specialists at the Pobeda Kolkhoz admitted that K. P. Shved's link did not have the main ingredient for success -- sufficient feed. Also, these animal husbandry workers labored under the most difficult conditions: in the cold and mud. As a result of bad accounting and errors by sector managers, they were constantly cheated.

There were errors typical of many other farms. Cases were repeatedly encountered where contract links, including family links, were left without the necessary material-technical supplies. After all, when contracts are drawn up, they promise people a mountain of gold, so to speak. When it comes to the actual work managers forget their words.

This is just how they behaved at the Pobeda Kolkhoz in dealing with Shved's link. It did not have the needed feeds nor the required animal farm conditions. Specialists did not respond to requests to the kolkhoz board to correct the situation. Instead of working, link members had to go from one office to another and ask for what had been given to them in the contract. It is also strange that even after these errors for a long time they did not want to correct the situation.

Things were finally corrected. But how much anxiety this caused these people! They had to do quite a lot of work to correct the situation.

The facts reported by the Shved family were examined at a joint meeting of the party committee and the kolkhoz board. The family also charged that it was underpaid in the past.

Now five family links, including the Shved link, will be working at the kolkhoz. Judging from the program outlined by kolkhoz specialists, they have drawn the proper conclusions from their past errors. Feed rations have been reexamined. Feeds for each age group are allocated for programmed weight gain.

There are other family links operating in the rayon. At the Chervonnyy Pomezchnik Kolkhoz widespread use is made of family contracts for crop production. Contracts to grow feed roots on 700 hectares have been signed with 2,840 families. All this is good. However, so that errors similar to the ones allowed in relations with the Shved family link will not be repeated, farm managers and specialists must not leave the situation to chance, but constantly be attuned to family contract collectives' needs. It is insufficient to sign a contract with a family and stop at that. The real work

with contract collectives only begins after that. The quicker they learn this at the Pobeda Kolkhoz and the RAPO, the better it will be.

Editorial Commentary

Moscow SELSKAYA ZHIZN in Russian 6 May 87 p 2

[Article by SELSKAYA ZHIZN Economics Department]

[Text] Family contracts have many worthy features. It would seem unnecessary to have to convince anybody of this. Nevertheless, it must be admitted that they are not as widespread as one would wish. At times their introduction in some places is delayed. Why is this? Usually, the difficulties are because, after having signed a contract with a family to produce a given product, farm managers and specialists then consider that their obligations to a contract collective are exhausted. What happens then can be seen from the example of the case at the Pobeda Kolkhoz in Lelchitskiy Rayon, Gomel Oblast. Specialists' lack of attention to the family link's needs almost led to its dissolution. Fortunately, this did not occur. However, letters sent to the editors indicate that in other places this happens: People would like to work under family contracts, but farm management, after signing a contract, also gives difficulties. The desire to achieve good results disappears.

The matter is also harmed by a flippant attitude towards contract observation on the part of some farm managers and specialists. Sometimes they are threatened by the family's greater earnings and later attempt reexaminations of previously agreed upon conditions. This cannot lead to anything good. If people produce a lot, then their earnings should be high. This is not to be feared. There should be no breaking of people's faith that their labors will be properly paid.

The contracted material-technical supply conditions should be equally scrupulously observed. Everything promised to them should be delivered on time. It should be firmly understood that without guaranteed supplies there can be no contracts, including family ones.

Some managers' and specialists incompetence and inability to organize this is a brake upon the general mastery of family contracts. Cadre inertia is an equal hinderance to innovations. Here is an example. In Uspenskiy Rayon, Pavlodar Oblast, A. F. Rudko's link at the Kolkhoz imeni Panfilov has, for several years, had excellent results from cattle feeding. It would seem that in the oblast, where the feeding of bull calves has lost money, there would be interest in the family collective's experience, it would be raised up on a shield and become generally widespread. But what does one see today? In the rayon there are only two such links and in the entire oblast only eight. Inertia is stronger than the desire to work effectively.

It is possible everywhere today to organize this so that family contract will improve production efficiency. This requires painstaking work with people and persistence in achieving goals. Let there be a genuine, concerned and interested master to each field, crop rotation section and animal farm. This should become the first concern to party, soviet, trade union and komsomol

organizations and agroprom management organs at all levels. Farms everywhere are converting to self-payment and self-financing. This conversion is impossible without the use of progressive forms for the organization and payment of labor, including progressive forms such as family contract. They have shown their advantages. Now they must be given a broad road.

Use in Lithuania

Moscow VESTNIK AGROPROMA in Russian No 16, 17 Apr 87 p 3

[Article by Kh. Markov, senior scientific associate, Lithuanian Scientific-Research Institute for Agricultural Economics: "On the Farm, Field and Homestead"]

[Text] When the first contract family farms began to appear, some scholars and specialists were skeptical. There were even attempts to show the this method's unsuitability under contemporary conditions of public production.

Time has passed. Now one can say that the family contract is every more firmly included not only in economic terminology, but also in agricultural life. It has become an important part of collective contract on kolkhozes and sovkhoses.

Four types of family contract have been most effective and widespread in the Lithuanian SSR: raising and feeding livestock and keeping cows and poultry using public production buildings; raising and feeding livestock and poultry directly at the population's household private operations; family groups of machinery operators; crop production.

Kolkhozes and sovkhoses in Shvenchenskiy and Kaunasskiy rayons were among the first to introduce family contracts for hog feeding. Take the Laudes Draugiste Kolkhoz in Shvenchenskiy Rayon. Previously it did not produce commercial pork. The farm board and party organization decided to give greater attention to this question.

The impetus came from the CPSU Central Committee and USSR Council of Ministers' decree "On Further Improvements in the Economic Mechanism for Operations in the Country's Agro-Industrial Complex". Kolkhozes and sovkhoses obtained the possibility of using family and personal contract as a form of collective contract, taking specific production conditions into account. Proceeding from this decree and not waiting for instructions from superior organizations, the kolkhoz board and public organizations decided, based upon kolkhoz farmers' private subsidiary operations and upon voluntary principles, to create family hog feeding farms. These farms are distinguished from private subsidiary operations in that the kolkhoz allocates, by contract, the inhabitants additional land and the right to keep more animals than norms allow and then supplies feed.

First pensioners and then young families turned to the kolkhoz board. Initially hogs were raised at four homesteads. The pensioner Ionas Pyatrushka and his wife obligated themselves to raise 30, the family of Andryus Pyatrushka -- 20, the young family of Pranasa Cheponisa, a machinery operator

-- 48 hogs. Genorata Novitskene, a homemaker, undertook, on contract with the kolkhoz, to raise more than 40.

Families who have signed contracts need to be supplied with young animals. Therefore, in the spring the kolkhoz purchased piglets from the Viliya Interfarm Hog Raising Enterprise, paying 3.5 rubles per kilogram (live weight). Kolkhoz farmers who undertook to raise piglets, contractually obligated themselves to bring them up to bacon condition in six months. In summing up results from the first round of feeding, from April to October, it became clear that incomes obtained from selling pork considerably exceeded expenditures for maintaining the family farms.

This turned out to be profitable not only to the kolkhoz, but also to the kolkhoz farmers. According to estimated prices for the final product -- fed hogs -- they receive earnings of the same order as collectives working on contract. The supplements to family budgets are very substantial. People are paid for basic work in public production, incomes from private subsidiary operations and also from family hog raising farms.

The kolkhoz board also fulfills other obligations indicated in the family contract. Families feeding hogs at home farms are allocated an additional 0.4-0.5 hectares of land for root crops and green feed. Also, with the kolkhoz's help summer sheds for the outdoor keeping of swine, attachments to barns, were modified, electric power and pumps installed at homestead plots. Taking rations into account and depending upon the number of animals, the kolkhoz allocates not only mixed feeds, but also grass pellets and powdered milk. For example, A. Pyatrushka's family contract called for it to feed 20 hogs. The kolkhoz allocated each animal 350 kilograms of mixed feeds, 50 kg of pelletized grass meal and more than 50 kilograms of powdered milk.

Kolkhoz managers were convinced that not only pensioners, but also young families eagerly responded to family contracts. The family of the young machinery operator Pranas Cheponis, who raised 48 swine to bacon condition, did a good job.

In total family farms produced and sold about 15 tons of pork with production costs of 142 rubles per quintal. For their work each kolkhoz family obtained on the average, 2,000 rubles in profits.

Other kolkhozes and sovkhoses in the rayon also used the services of households introducing family contracts. Workers at the Zheymyan Sovkhoz also started feeding hogs under roughly the same conditions. True, they raised about 3-4 hogs each on family contract, but there are sizable reserves for increasing meat production. It is sufficient to note that 11 pensioners out of 40 families were engaged in hog raising for the sovkhos. These latter 29 families have so far practically not participated in public production.

The new form of contract helps save feed. For example, while in Kaunasskiy Rayon an average of 723 feed units are used to produce 1 quintal of weight gain in hogs, it only takes 500 feed units if the hogs are raised under family contract. For beef production the figures are 1,109 and 850 feed units. On

family farms daily weight gain for hogs is 500-550 grams and for young cattle it is 900-1,000 grams.

Of special interest is the experience in raising mangel-wurzels at the Experimental Farm of the Lithuanian Scientific-Research Institute for Veterinary Science. Many families have plots several hundredths of a hectare in size. Under family contract they raise mangel-wurzels from planting to harvesting. Accounts are settled with them after they deliver the mangel wurzels to the farm. Incidentally, rayon average yields for this crop are 400 quintals per hectare, at the farm under discussion more than 700, and on plots where this crop is raised by families -- up to 900 and more quintals.

Basic Indicators for the Work of Family Farms on Contract during 1986 in Shvenchenskiy Rayon

| Indicators | Kolkhoz Lyaudis Draugiste | Sovkhoz Adutishkis | Rayon Total |
|--|---------------------------------|-----------------------|----------------|
| Number of families on contract | 4 | 1 | 107 |
| Number of hogs on feed | 143 | 20 | 392 |
| Number of hogs taken off feed | 143 | 19 | 197 |
| Feed used per: | | | |
| 1 kg weight gain (feed units) | | | |
| under contract | 6.48 | 6.53 | |
| in public production | 14.5 | 11.6 | 7.5 |
| Production costs per quintal of weight gain (rubles): | | | |
| under contract | 141.96 | 154.56 | |
| in public production | 268.05 | 326.52 | 217 |
| Profitability | 89.5 | 72.9 | 21.5 |

Thanks to family contracts the farm annually receives 3,000 and more tons (gross harvest) of mangel-wurzels annually. Each cow receives at least 5 tons of feed, making it possible to obtain 4,800 kilograms of milk per cow on a steady average annual basis.

At the collective of the experimental farm, which is lead by L. Vasilyauskas, an honored zootechnician in the republic and a candidate of biological sciences they have created a favorable atmosphere for active work in public production, under family contract and on private subsidiary operations. A stable labor collective has evolved. In recent years more than 100 farmstead type brick houses have been built.

Following the example of the Experimental Farm at the LNII for Veterinary Science, in 1986 the neighboring Zhezhtaryay Horticultural Sovkhoz and the Dovaynonis Poultry Raising Sovkhoz organized family contracted mangel-wurzel growing and obtained 720 and more quintals of roots per hectare.

Last year 1,500 tons of mangel-wurzels were grown on 30 hectares at the Paduztis Kolkhoz in Zarasayskiy Rayon. To a considerable extent this was attained through family contracts. After the mechanized planting of the mangel-wurzels, the kolkhoz farmers did the remaining work themselves. The contract made provisions to pay for labor at progressively increasing rates. For example, if yields are 350 quintals per hectare, the price per ton is 12.5 rubles, while if yields are 700 q/ha, then it is 17.5 rubles.

Family contracts for growing feed crops at the Experimental Farm of the LNII for Veterinary Sciences and at other sovkhoses and kolkhoses in the republic helped promote interest in increasing mangel-wurzel yields and the gross harvest of this valuable crop. This form of organizing labor is completely in accordance with socialist production relations and socialist principles of distribution and payment according to labor. Family contract does not contradict the development of either social production or private subsidiary operations.

Just what conclusions can be drawn? The first results from our experience in organizing labor based upon family contracts in animal and crop production support the following:

Family farms and fields more fully open paths and potentials for improving rural families' labor potentials;

Family contract to some extent slows down the undesirable process of the working population migrating from the countryside to cities.

Family contract helps enlist additional labor resources into agricultural production through the active participation of pensioners, homemakers, young people and pupils and citizens living on kolkhoses or sovkhoses;

Family contract gives public farms real advantages in obtaining additional products: meat, milk and feeds. At the same time family incomes are increased and conditions are created for supplying privately owned livestock with feeds through the introduction of various forms of payment in kind.

Family contract helps in bringing up young people in a spirit of collectivism and increases responsibility for the results of labor in the family and social production.

Family contract makes it possible to use "unpromising" homesteads and villages, small farms and family plots to increase the animal and crop production and sales to the state.

11574

CSO: 1824/317

OMSK ZONAL CONFERENCE ANALYZES PRODUCTION POTENTIAL

Moscow PRAVDA in Russian 14 Jun 87 p 2

[TASS item: "Intensifying Production, Satisfying the Population's Requirements"]

[Text] The vital problems concerned with developing the agro-industrial complex were the object of attention by those who participated in a zonal seminar-conference held in the city of Omsk on 12-13 June.

The secretaries of oblast and kray party committees, the chairmen and deputy chairmen of agro-industrial committees, scientists and the leaders of agrochemical services and of kolkhozes and sovkhozes in autonomous republics, krays and oblasts in the Urals, Siberia and northern Kazakhstan all participated in the work of this seminar-conference.

The 1st deputy chairman of the RSFSR Council of Ministers, the chairman of Gosagroprom [State Agro-Industrial Committee] for Russia L.B. Yerminev and a secretary to the Central Committee of the Communist Party of Kazakhstan A.P. Rybnikov delivered reports on the tasks of the party, soviet and agricultural organs in connection with the introduction of intensive technologies for the cultivation of agricultural crops, the procurement of feed and the harvesting of crops.

In the reports and speeches, emphasis was placed upon the fact that the Urals, Siberia and Kazakhstan must play an important role in steadily increasing the production of grain. Approximately 51 million hectares of grain crop sowings are concentrated here, including more than 28 million hectares of food wheat. The kolkhozes and sovkhozes in these regions are producing many other food crops.

The intensive technologies are providing the farms with tremendous opportunities for further increasing the production of grain. For example, sowings cultivated using these technologies have produced 30 percent of the gross yield of grain, despite the fact that they occupied only 25 percent of the overall grain areas; for the Altay Kray, the figures are 35 and 23 percent respectively, for Orenburg Oblast -- 19 and 14, for Kurgan Oblast -- 38 and 30 and for Krasnoyarsk Kray -- 41 and 32 percent.

At the same time, by no means is full use being made of the potential afforded by these intensive technologies on many farms in the eastern regions of the country. The tasks for obtaining yields, as established in a decree handed down by the CPSU Central Committee and the USSR Council of Ministers, are not being carried out. This factor alone accounted for a shortfall of approximately 1 million tons of grain in the Altay Kray and in Chelyabinsk, Novosibirsk and Omsk oblasts.

Large differences in yield are being observed on intensive fields. Thus, on 14 experimental farms of scientific institutes in Siberia, on an area of 69,200 hectares, the spring wheat yield from intensive cultivation amounted to an average of 23.7 quintals per hectare and the yield for the region as a whole -- 5.5 quintals less. The kolkhozes and sovkhoses in Novosibirsk Oblast obtained from their intensive sowings an increase of only 4.9 quintals per hectare, Omsk -- 3.7, Kurgan -- 4.8 and in Sverdlovsk Oblast -- 4.6.

The reason for this situation lies mainly in failure on the part of the party, soviet and agricultural organs to attach proper value to the extensive introduction of progressive technologies and labor organization, in the low culture of farming and in weak technological discipline. There are still many leaders and specialists who are as yet unaware that the intensive technologies require more thorough knowledge, accurate use of the technological methods and strict observation of the schedules for carrying out operations, for applying dosages of fertilizer and pesticides, for cultivating the soil to the proper depth and for planting the seed. Here there must be no oversimplification or neglect. Only comprehensive utilization of the intensive factors can produce a high return. In this regard, attention is directed to the thorough training of machine operator personnel.

In the cultivation of grain crops in Siberia and Kazakhstan using the intensive technology, the greatest bottleneck is that of plant protection. Over the past year, the volume of this work has increased considerably. However, the agronomists and farm leaders and specialists in a majority of the oblasts have turned out to be unprepared from both a theoretical and practical standpoint for carrying out this work and the party committees have neglected the problem. At kolkhozes and sovkhoses in the Altay Kray, for example, an inspection of the phytosanitary condition was carried out in 1986 on only five percent of the areas cultivated using the intensive technology. Many sowings were not treated with preparations and thus they turned out to be damaged by diseases. As a result, the average yield obtained from intensive sowings was only 18.3 quintals per hectare.

An especially large shortfall in yield is being tolerated as a result of weed-contaminated sowings, low quality seed, violations of the schedules for the use of herbicides and inefficient work with mineral fertilizers. For example, it is known that the carrying out of soil and plant diagnosis for nitrogen content makes it possible to intervene in a timely manner in the mineral nutrition for grain crops cultivated using intensive technologies. However, many specialists are ignoring this important method.

Low rates for the liming of acid and gypsuming of solonetz soils are also arousing considerable alarm. As a result, there has been practically no

change in the areas of acid soil in western Siberia over the past 20 years and in eastern Siberia they have even increased by 4 percent.

In the Urals and Siberia, the operational rates for the all-round agrochemical servicing of fields are increasing only slowly and in Kazakhstan they have practically ceased with the elimination of the Selkhozkhimiya associations.

Special emphasis was placed upon the fact that crop rotation plans with clean fallow serve as the foundation for stable grain production in these regions. However, clean fallow is being employed here in a very inefficient manner. A portion of the fields allocated for clean fallow is being sown in forage crops, many tracts are being plowed late, only small quantities of mineral and organic fertilizer are being applied to them and quite often the fields are overgrown with weeds. Last year, in the Altay Kray, the Bashkir ASSR and in Omsk, Kurgan and Novosibirsk oblasts, use was not made of roughly 600,000 hectares of clean fallow in behalf of spring wheat for cultivation using the intensive technology. In Kazakhstan, mineral fertilizer is being applied to only one third of the fallow, organic fertilizer on 10 percent, herbicides on 15 and windbreak strips are being sown on 40 percent of the fallow fields.

Under conditions involving a prolonged and rainy autumn period, special importance is being attached in Siberia and northern Kazakhstan to the treatment of intensive sowings, grown following clean fallow, with so-called retardants. They prevent lodging of the plants. However, sufficient use is not being made of this method. As a result, considerable crop losses are being sustained. This year, the farms in Siberia and Kazakhstan have been issued three times more retardants than they received last year and the task is now one of ensuring that they are utilized in a timely manner.

According to forecasts by specialists, this year's conditions are favorable for the spread of all types of plants pests and diseases. The crops must be inspected immediately, each field must be studied and measures must be undertaken aimed at combating the pests and diseases. The efforts of the agronomic service, rayon stations for the use of chemical processes and the scientific institutes must be directed towards carrying out this work. Special attention must be given towards protecting the crops against weeds.

During the speeches, emphasis was placed upon the fact that owing to the conditions found in the Urals, Siberia and northern Kazakhstan, special importance is attached to measures which regulate plant growth and also which make it possible to accelerate the ripening of the grains. The farms must make more extensive use of growth regulators and not tolerate lodging of the crops. The Siberian Branch of the USSR Academy of Sciences has developed a senication method which not only accelerates the ripening of the grain crops but also raises their yields and improves the quality of the grain.

This year, with the sowing being carried out later than usual, senication may be of great importance to the crops and thus thorough preparations should be made now for carrying it out.

Those in attendance during the discussion devoted a great amount of attention to the status of affairs in feed production. They noted that many oblasts and

autonomous republics are annually failing to carry out the plans for procuring coarse and succulent feeds and are tolerating a low protein content in this feed. In Aktyubinsk, Eastern Kazakhstan, Karaganda, Kokchetav and Kurgan oblasts, there are 88-94 grams of protein per feed unit and in Uralsk, Tselinograd, Pavlodar, Kustanay and Semipalatinsk oblasts -- 70-80 against a requirement for 120 grams. This is occurring mainly owing to the fact that high protein crops are being introduced into operations only slowly and feed production continues to develop extensively only on the basis of an expansion in the sowing areas. All of this leads to an overexpenditure of grain for feed purposes.

Natural feed lands play an important role in strengthening the feed base for animal husbandry. However, the work concerned with raising productivity and improving the use of these lands is proceeding very poorly. Annually, the plans for improving haying and pasture lands are not being fulfilled. In particular, the work associated with improving the land on farms in the Udmurt ASSR and in Perm, Tomsk, Irkutsk, Karaganda and Semipalatinsk oblasts is being carried out in a very unsatisfactory manner.

This year the CPSU Central Committee is attaching special importance to increasing the procurement volumes for high quality feed and for protecting this feed. The party committees have been assigned the task of ensuring that not less than 21 quintals of feed units of coarse and succulent feed will be obtained per standard head. Progressive forms for organizing and stimulating labor, the check system of control over feed expenditures and also wages based upon final results, with the feed quality being taken into account, must be introduced into operations on an extensive scale.

A great amount of attention has been given to the problems concerned with cultivating groat and oil-bearing crops and to making thorough preparations for harvesting the crops. During the seminar-conference, a high value was placed upon the work of those farms in Omsk Oblast which created highly productive production line complexes for the primary processing of grain and a desire was expressed to have this experience introduced on an extensive scale.

Large numbers of livestock are being maintained on farms in the Urals, Siberia and northern Kazakhstan. In analyzing the work of the livestock breeders, the speakers pointed out those areas of neglect which are preventing a large number of oblasts from increasing their production of animal husbandry products and ensuring that the population is fully supplied with such products. They stated that in carrying out this work use must be made not only of the social production reserves but also of the potential afforded by the private plots and subsidiary farms of enterprises, as is being done in Omsk Oblast. Here, 109 kilograms of meat are being produced per inhabitant. During the last 2 years alone, this indicator increased by 7 kilograms. Over the past 10 years, meat production in the private sector increased from 27,000 to 60,000 tons or by a factor of 2.2. The party, soviet and economic organs have achieved a situation in which almost every family in the rural areas is engaged in raising cattle, hogs and poultry. Constant support is being furnished to the population in this regard: families are able to acquire young pigs and an unlimited number of young poultry stock. Last year, the oblast's cooperation specialists purchased 20,000 tons of meat from the

population and this made it possible to satisfy by almost one half the overall volume of meat products required for local consumption.

Those in attendance listened to a speech delivered by the secretary of the CPSU Central Committee V.P. Nikonov.

The participants in the seminar-conference devoted a great amount of attention to studying the practical experience accumulated by the agroprom [agro-industrial committee] for Omsk Oblast.

During his stay in Omsk Oblast, V.P. Nikonov visited a number of farms and displayed interest in the intensification of production based upon the introduction of progressive technologies and leading methods for labor organization and wages.

The secretary to the CPSU Central Committee visited a market in Kirovskiy Rayon in the city of Omsk, enterprises and stores of consumer cooperation and a complex for the fattening and raising of 10,000 head of young cattle stock at the Tavricheskiy Sovkhoz. Models of agricultural equipment intended for the intensive cultivation of grain, forage and oil-bearing crops were inspected out on the fields of an uchkhov [training farm] of the Omsk Agricultural Institute imeni S.M. Kirov and the Kolos Scientific-Production Association and at the Luzinskiy Sovkhoz.

During meetings with scientists, specialists and farm and field workers, discussions were held on the manner in which the Food Program was being carried out and the problems concerned with further improving the supply of food products for the population were reviewed. Special attention was devoted to increasing the production and raising the quality of grain and feed, based upon the extensive introduction of intensive technologies and the contractual organization of labor, with wages being paid out of gross income.

During his trip throughout the oblast, V.P. Nikonov was accompanied by 1st secretary of the Omsk Oblast CPSU Committee Ye.D. Pokhitaylo.

7026

CSO: 1824/303

Briefs

IMPROVED SUGAR BEET CULTIVATION--Lipetsk, 14 Mar--This year the farmers in Dobrinskiy Rayon resolved to increase by more than one half the return from their grain fields. In doing so, they will be aided by a conversion over to intensive cultivation methods not only for winter wheat but also for peas and groat crops. Compared to last year, the intensive field areas will be expanded by more than twofold. This year will be a turning point in the cultivation of sugar beets. As yet, only a few mechanized teams are cultivating this crop in the absence of manual labor. This year, such teams have been organized on all of the farms. The plans call for 70 percent of the sugar beet sowings to be cultivated using machines prior to the end of the current five-year plan. [Text] [Moscow SELSKAYA ZHIZN in Russian 15 Mar 87 p 1] 7026

LIPETSK OBLAST SOWING COMPLETED--Lipetsk--The farmers in Lipetsk Oblast have achieved their first victory in behalf of the 1987 harvest. The sowing of early grain crops, sugar beets and rape was completed yesterday. A considerable complex of operations was carried out during the best periods and on a high agrotechnical level. The rural communists furnished assistance in motivating the collectives to perform excellent work. The party organizations undertook to exercise control over agronomic, engineering and cultural-domestic support for the country. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 10 May 87 p 2] 7026

INDUSTRIAL TECHNOLOGY EMPLOYED--Belgorod--Use of the industrial technology for cultivating sugar beets enabled the farmers in Belgorod Oblast to achieve rapid rates and high quality in sowing this valuable technical crop. Yesterday they completed their work out on the beet fields, having completed their sowing work in just six working days. Success was achieved as a result of efficient organization of the work of non-schedule brigades and teams and efforts directed towards ensuring that they were supplied with seed and fertilizer. [Text] [Moscow PRAVDA in Russian 15 May 87 p 1] 7026

TENDING OF BEET CROP--Belgorod, 15 Jun 87 p 1--Today the farmers in three rayons of Belgorod Oblast -- Valuyskiy, Shebekinskiy and Yakovlevskiy -- completed forming their plantings. This work is nearing completion throughout the oblast as a whole. The formation of the density of the plantings remains to be carried out on less than one tenth of all of the areas. Sugar beets are being grown on Belgorod farms this year using mainly the intensive technology.

Non-schedule teams have commenced loosening the inter-row spacings while simultaneously applying a top dressing of liquid nitrogen fertilizer to the plants. This agricultural method ensures intensive plant development and strong root growth. [Text] [Moscow SELSKAYA ZHIZN in Russian 16 Jun 87 p 1] 7026

SUGAR BEET SOWING COMMENCES--Kursk, 29 Apr--Following a prolonged spring period, good days have finally arrived. And immediately thereafter the roar of motors resounded out on the fields. Hundreds of sowing units joined in the work. In order to make up for the lost time caused by the poor weather, many machine operators are operating on the basis of hourly schedules, making maximum use of the daylight period and preparing the soil at night. The sowing of sugar beets has commenced. The farms in Belovskiy and Sovetskiy rayons were the first to commence this work. The work of applying a top dressing to the winter crops is being carried out at a maximum tempo. Fourth aircraft of agricultural aviation are circling the fields and ground equipment has been placed in operation. [by A. Trubnikov] [Text] [Moscow SELSKAYA ZHIZN in Russian 30 Apr 87 p 1] 7026

QUALITY SOIL 'INCONVENIENT'--Kursk Oblast--One of the chief advantages -- the richness of local soil -- has turned out to be an inconvenience for beet growers in Kursk Oblast. Clumps of the chernozem soil are adhering to the tractor wheels and the boots of the field crop growers. The blades of the cultivators are pulling the tender beet seedlings from the soil along with the weeds. "And this is occurring at a time" complained a member of the beet growing team at the Kolkhoz imeni Lenin in Oktyabrskiy Rayon A. Neskorodov, "when the plants require assistance from us the most: a crust has formed as a result of driving rainfall and the weeds are growing. In addition to slowing down the inter-row cultivation work, strong rainfall has also caused crop losses in a number of instances. The beets had to be resown on 30,000 hectares. However the obligations undertaken by the oblast -- to sell 4 million tons of sugar beets during the jubilee year -- still remain in force. The oblast's APK [agroindustrial committee] has reported that the inter-row cultivation of the crops must be completed within the next 7 days. A top dressing will be applied to the plants simultaneously. [by Ye. Kotyayev] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 9 Jun 87 p 1] 7026

HERBICIDE SHORTAGE--The plan being followed by farmers in the Altay Krai calls for a considerable expansion in the cultivation of crops using the intensive technology. This year the intensive technology will be used for cultivating more than one half of the sugar beet plantings, buckwheat on 50,000 hectares, almost the same amount of millet and sunflowers on 30,000 hectares. Unfortunately, these undertakings by the Altay farmers are encountering difficulties which are at times negating their initiative. Here is one example. The krai's farms decided to expand their sunflower sowings from 91,000 to 120,000 hectares and yet the krai allocated only 32 tons of the highly effective herbicide used for destroying weeds -- Treflan -- or four times less than the amount issued last year. And indeed it was the treating of the crops with this preparation that enabled many farms in Slavgorodskiy, Blagoveshchenskiy and other rayons to cultivate this crop and to obtain 13-15 quintals of seed from each hectare last autumn, or more by a factor of two than the amount obtained from fields which were not treated with Treflan.

There is no need for mentioning the fact that the Altay Kray is the only region in Siberia in which sugar beets are under cultivation. Nor is there any need for discussing the acute shortage of manpower in the eastern part of the country. In order to eliminate the traditional dividing up of "hundredths of hectares" for the entire population, from school children to the secretaries of rayon committees, the Siberians instead are striving to convert this crop over to the industrial method of cultivation. This year the plans call for this crop to be grown on 50,000 hectares using the intensive technology. However, once again there is a shortage of herbicides. The kray has issued two times less than was the case last year. [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 10 May 87 p 1] 7026

BEET SOWING COMPLETED--Barnaul--The Altay machine operators have completed sowing their beets. The chief characteristic of this present spring period is the introduction into operations on an extensive scale of the industrial technology for cultivating this crop. This progressive method, which releases a considerable number of personnel from having to perform laborious work, will be used for growing beets on 50,000 hectares this year. This is almost 20,000 more hectares than last year. Practically all of the beet fields have been converted over to the collective contract method. [Text] [Moscow VESTNIK AGROPRONA in Russian No 22, 29 May 87 p 1] 7026

SUGAR BEET PREPARATIONS--Voronezh, 23 Jan--The oblast's farms are actively preparing to cultivate their sugar beets using the intensive technology. This year, for the very first time, this method has been approved for use on an area of 140,000 hectares, with use being made of soil trenching implements designed by scientists attached to the All-Russian Scientific-Research Institute imeni Mazlumov. An order calling for the production of 2,000 such implements has been distributed among the oblast's industrial enterprises. Seven hundred specialized beet production teams which will employ the intensive technology have already been formed in the various rayons. Training is presently being provided for the personnel. [by A. Katkalov] [Text] [Moscow SELSKAYA ZHIZN in Russian 24 Jan 87 p 1] 7026

TENDING OF CROPS--Voronezh, 19 May--The oblast's farmers, having completed their sowing operations, are proceeding without delay to tend their grain, technical and forage crop plantings. The aircraft of agricultural aviation, which are treating the beet plantations and winter wheat sowings against pests and diseases, have appeared over the fields of kolkhozes in Petropavlovskiy, Kantemirovskiy, Kalachyevskiy, Verkhnemamonskiy, Talovskiy and other rayons. At the same time, ground equipment is being used throughout the kray for treating the plantations and thereafter all areas with toxic chemicals in the interest of combating the flea-beetle and weevils. [by A. Katkalov] [Text] [Moscow SELSKAYA ZHIZN in Russian 20 May 87 p 1] 7026

SPECIAL BIOLOGICAL METHOD--Voronezh Oblast-- This year the sugar beet fields in Voronezh Oblast occupy 200,000 hectares. It is a busy period out on the beet plantations at the present time -- the formation of the plant density and a campaign against their pests -- flea-beetles and weevils -- are in progress at the present time. The flight of the butterfly of the beet webworm began only recently in the southern rayons. The farm specialists and beet growers plan to make extensive use of a biological method for combating this pest, a

method which is safe as far as the surrounding environment is concerned. "At our biological factory" related the chief agronomist for the oblast's plant protection station V. Andreyev, "a large batch of trifograms has been prepared. We are releasing them on the plantations. For the very first time this year, in addition to re-equipped OVT-1A sprayers, we are also using aircraft for this purpose. [by A. Pyatunin] [Text] [Moscow SELSKAYA ROSSIYA in Russian 4 Jun 87 p 1] 7026

SUGAR BEET AREAS RESOWN--Voronezh Oblast--Under a bright sun, the sugar beet plants at the Ostrogozhsk Tikhiy Don Kolkhoz are literally gathering strength. This crop is not threatened this year by the "green fire." Exemplary preparation of the fields has proven fruitful -- not one weed is visible in the inter-row spacings. The beet plantations are in fine condition on a majority of the farms in the region. In carrying out their work, the goal of the beet growers in Novokhoperskiy Rayon is that of obtaining a fine harvest. Here the weeds were destroyed in all areas in a timely manner and the entire area was treated with toxic chemicals against flea-beetles and weevils. At the present time, the mechanized thinning out of the plants and the formation of the plant density are being carried out in all areas. Certainly, manual labor in carrying out the last operation is not excluded. But the work is going well -- the beet production teams on a large number of farms are operating on the basis of collective contracts. The present prolonged spring period has reduced considerably the time available for the crop to fully form and yet the beet growers are striving to "compress" the growing season by means of agrotechnical measures and a worthy crop is developing. Naturally, incidental facts concerning a careless attitude towards the work appear as a scandal against this background. Let us take this same Ostrogozhskiy Rayon as an example. Here the bureau of the rayon party committee was forced even to adopt a special decree regarding the irresponsible attitude being taken towards tending the beets by the leaders and specialists of the kolkhozes Rossiya and 40 Let Oktyabrya. After crudely violating a complex of measures aimed at combating pests, they continued to waste time and tolerated considerable crop losses. The areas have now been resown. But indeed the harvest to be obtained from them will be reduced considerably! A question springs to mind: is it not because of fault on the part of such farms that for 10 years in a row now the oblast has been unable to fulfill its plans for procuring sugar beets? [by A. Katkalov] [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 17 Jun 87 p 1] 7026

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VASKHNIL ACADEMICIAN ON QUALITY IMPROVEMENT OF MIXED FEED

Moscow ZHIVOTNOVODSTVO in Russian No 5, May 87 pp 2-5

[Article by K.M. Solntsev, VASKhNIL academician: "Improving the Quality of Mixed Feed"]

[Text] The majority of livestock farms of kolkhozes, sovkhoses and inter-farm enterprises, in carrying out the tasks of the Food Program, achieved year-round rhythmic operations which made it possible, during the 1982-1986 period, to increase meat production throughout the country by 16.4 percent, milk by 13.7 and eggs by 13.3 percent, with no increase in the number of livestock.

The intensification of animal husbandry operations turned out to be a true basis for increasing the production of goods and improving the supply of products for the population.

Positive results are obtained from many inputs. Included in their number and occupying an important position is a complex of measures for improving the quality of feed. Over the past 10 years, the proportion of hay of 1st class quality increased from 23 to 53 percent, haylage from 14 to 36 and silage from 22 to 47 percent. The proportion of 3d class and sub-standard hay declined from 57 to 24 percent, haylage from 55 to 36 and silage from 42 to 24 percent. The quality of mixed feed improved.

The readers are aware that, based upon the Editorial Board's initiative, the problem concerned with raising the quality of mixed feed produced by state, inter-farm, kolkhoz and sovkhos enterprises was discussed on the pages of this journal in 1985 and 1986. Scientific workers, production workers and leading workers attached to USSR Gosagroprom [State Agro-industrial Committee] and the USSR Ministry of Grain Products participated in this discussion. The solutions for the complex of questions discussed must bring about serious improvements in the quality of mixed feed and in this manner promote the intensification of animal husbandry.

Obviously, based upon the positive influence generated by the above-mentioned discussion, the Main Administration for the Mixed Feed Industry of the USSR Ministry of Grain Products conducted an economic experiment at a number of its own enterprises in 1986 in connection with restructuring the system for controlling the quality of mixed feed and the wages for workers and

specialists in individual departments, with an evaluation of the final product being taken into account.

It has been estimated that prior to 1986 the average mixed feed plan (in terms of capability) expended 37,000 hours during a year's time in the chemical analysis of raw materials and finished products. At the same time, no control was exercised over the quality of the raw material processing during various stages in the technological process for producing mixed feed. The economic experiment revealed that not less than 50 percent of the time spent for determining quality should ideally be used for exercising thorough control over the technological process. It was precisely here, during the production process, that many deviations from the TU's [technical conditions] were tolerated in the past and this was reflected in the finished products.

The experience of three enterprises included in the experiment has shown that many questions concerned with raising the quality of mixed feed can be resolved successfully by changing the system for controlling the production technology for mixed feed and examining on this basis the wages of a plant's collective of workers. The results of the 1986 economic experiment have been introduced into operations this year at all of the branch's enterprises.

Commencing in 1984 and 1985, farms which purchase mixed feed from enterprises changed their system for the establishment of feeding norms. Rations, including those which include mixed feed, are now being developed taking into account the new and detailed feeding norms, which for cattle are described by 24 indicators, for hogs -- 27, sheep -- 16-18, horses -- 29 and poultry -- 40 indicators. In this regard, since 1985 the mixed feed enterprises have been issuing certificates to the farms on the quality of the mixed feed being produced in accordance with the new TsSU [Central Statistical Administration] Form No 43.

Based upon the above, all laboratories of mixed feed enterprises must be equipped with modern instruments for carrying out mass analyses for the purpose of determining the content of amino acids, vitamins, microelements and other substances in the mixed feed. This is very important for improving the quality characteristics of mixed feed.

In discussing the problem of mixed feed quality, a great amount of attention was given to improving the availability of raw materials to the mixed feed industry. The non-fulfillment of contractual conditions for deliveries of protein feeds, feed of animal origin and feed additives tends to disrupt the normal operational rhythm of enterprises and forces them to violate the content levels for biologically active substances, protein and mineral substances in the products being produced, as called for in the GOST [state standard].

In the opinion of the USSR Ministry of Grain Products, for eliminating interruptions in the deliveries of raw materials, a positive role must be played by the new system for the use of feed resources. In 1986 the CPSU Central Committee and the USSR Council of Ministers adopted the decree entitled "Further Improvements in the Economic Mechanism for Management in the Country's Agro-Industrial Complex." This decree authorizes the councils of

ministers and the gosplans of union republics to distribute the feed resources, biologically active substances and feed additives among many positions. Improvements in the mechanism for distributing feed resources aimed at ensuring their more efficient use must also promote improvements in the matter of ensuring that the mixed feed enterprises are supplied with raw materials.

Special importance is being attached to including local industry in the production of feed additives and mineral feeds. During the slaughtering of livestock, full use is still not being made in all areas of such waste products as bone, fodder fat and blood, which following processing become valuable components of mixed feed.

The participants in the discussion unanimously drew the conclusion that it is necessary, at a rapid rate, to develop the production of traditional feeds in order to lower the rather high level of grain components in the mixed feed. Permit me to cite such an example. Plants of the sugar industry annually produce millions of tons of beet pulp residue. Unfortunately, only approximately 15 percent is processed into dry pulp residue, which in terms of its nutritional value is equated to concentrated feed. One kilogram of such product includes 0.84 feed units, 38 grams of digestible fiber and 6.1 grams of lysine. The dry pulp residue which the plants turn over to farms -- the suppliers of beets in pressed form -- is stored poorly and thus the nutrient losses reach 40-45 percent, the equivalent of a loss of 4 million tons of grain. This is a very high price for poor storage and the use of feed resources. Each year, equipment modernization is carried out at a considerable number of sugar plants. Much is being done to improve the sugar production technology and yet very little attention is being given to pulp residue.

Today, with the sugar and mixed feed industry being included in one administrative system -- USSR Gosagroprom -- the time is at hand for solving this problem.

The inadequate support for the mixed feed enterprises in the form of protein feeds, biologically active substances and other types of raw materials serves to reflect the lag that has developed in connection with developing the feed base for animal husbandry. This makes it even more important to multiply the efforts being directed towards the successful carrying out of the Belok Program. The solution for this problem is being carried out in many directions, including an expansion in the production of pulse crops, an increase in the protein yield from grain forage crops and active use of other reserves for protein feeds.

During the discussion, critical comments were addressed against the planning organs in connection with the existing practice of allocating protein feed directly to consumers, that is, to farms, complexes and poultry factories, thus by-passing the mixed feed enterprises. There is little basis for the fear that they are not using as intended the funds allocated for protein feed. This is borne out by the example of work performed at the Borisov Mixed Feed Plant (BSSR). The plant, upon receiving protein feed, including for the Sovkhoz imeni 50 Let BSSR in Minsk Oblast, which has a complex for 108,000

hogs, produces rich mixed feed for the complex. As a result, a shop for the processing of mixed feed has already been closed for 10 years at the complex. A contract has been concluded between the plants and sovkhoses for supplying the farms with mixed feed and this contract is being carried out in a strict manner. The Sovkhoz imeni 50 Let BSSR -- the republic's leading farm -- has annually been fulfilling and over-fulfilling its plan for the production of pork and this is largely owing to the efforts put forth by the collective of the mixed feed plant. Many mixed feed enterprises can operate according to this principle. Planning discipline in the use of protein feed must be strengthened and solutions must be found for many problems concerned with the processing of mixed feed on the farms.

The quality of the mixed feed is dependent upon its being enriched with micro-components -- vitamins, ferments, amino acids, microelements and antibiotics. With the conversion of animal husbandry over to detailed feeding norms, the role played by mixed feed in optimizing biologically rich rations has increased sharply. This is why a deviation from the recipe used in the production of mixed feed has an extremely adverse effect on the level of animal productivity.

All of the participants in the discussion expressed a need for adopting energetic measures for accelerating an increase in the capabilities of that industry engaged in the production of biologically active substances. The importance of this is illustrated using the amino acid lysine as an example. As is known, lysine is included in a group of irreplaceable amino acids which animals are incapable of synthesizing. Lysine must be supplied to an organism in the form of feed or a feed additive (synthetic preparation).

In the case of a deficit of lysine in the protein portion of a ration, the overwhelming majority of farms is systematically forced to over-expend 25-35 percent of its feed in order to obtain output, that is, as much feed as lysine is missing in the ration.

It was 10-12 years ago that our country began building its lysine production industry. However, the rates for its development do not take into account the needs of animal husbandry. For example, in 1985 the branch's lysine requirements were satisfied by only 20 percent and in 1986 -- by 30 percent. Even by the end of the current five-year plan, the requirement of animal husbandry for synthetic lysine will be satisfied by only 48 percent.

Nor is the situation any better in the case of many vitamins or other preparations.

The participants in the discussion devoted a great amount of attention to the recipes for mixed feeds and premixes. At the present time, the mixed feed enterprises are continuing to be guided by a collection of recipes published in 1972. This collection contains 180 recipes which were developed on the basis of scientific studies carried out during the years of the 8th Five-Year Plan. Naturally, the majority of the recipes contained in it are obsolete.

Commencing in 1986, a new system was established on the basis of which the republic gosagroprom's were authorized to approve recipes for mixed feed and

premises developed by local scientific institutes. This is creating fine conditions for converting over to the production of mixed feed, based upon zonal recipes which better reflect the peculiarities of the chemical structure and nutritional value of the individual components. At the same time, a recommendation was made to have a summary union collection of mixed feed recipes which would enable the mixed feed enterprises to handle correctly the matter of feed selection.

According to VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin], 122 recipes for mixed feed, premises and BVD [protein and vitamin additives] were developed by institutes during the 11th Five-Year Plan for cattle. This included 30 mixed feed recipes for cows (with 19 of them being for highly productive cows), 1 for bulls, 14 for replacement young stock, 11 for young stock undergoing fattening regimes, 14 BVD recipes, 21 premises, 5 micro-additive recipes, 15 ZTSM recipes and 11 recipes for feed mixtures. During these years, 178 recipes were developed for hogs, including 21 recipes for sows, 5 for boars, 39 starter mixed feed recipes for young pigs of early weaning, 38 recipes for young pigs of 2-4 months of age, 34 for hogs undergoing fattening, 13 recipes for replacement young stock, 16 premix recipes and 12 BVD Recipes.

According to a conclusion drawn by VIZh [All-Union Scientific Research Institute of Livestock Breeding], all of the recipes presented conform mainly to gost 8-20-77 in terms of nutrient content and they also meet the requirements for the detailed feeding norms according to their structure.

It is important to emphasize that many mixed feed recipes were composed based upon a lowered content of grain components. For example, new mixed feed recipes were developed at VIZh for highly productive cows in which the grain portion was lowered by 26 percent, the grass meal and bran level was simultaneously increased and feed fat was introduced. During testing carried out over the course of a 150 day experiment with a new mixed feed, the average daily milk yield per cow amounted to 24.4 kilograms of milk. In terms of all of the other indicators, the experimental group of animals did not differ from the control group. The productivity of the cows in the control group (the proportion of grain crops in the mixed feed was 66 percent) amounted to 24.3 kilograms of milk.

Over a period of 5 years, approximately 320 new mixed feed recipes, premises, BVD's and feed mixtures were developed for all types of animals. These recipes should be approved and a new collection of mixed feed recipes should be published. Subsequently the recipes should be examined not once every 15-16 years but rather once every 5 years.

The time is at hand for clearly defining the role played by computer equipment in composing mixed feed recipes and premises. In the opinion of those who participated in the discussion, the use of computers for partially correcting recipes is proper in those instances where an enterprise does not have supplies of the needed raw materials at its disposal. However, a computer can carry out computations only within the framework of the program included in the machine's memory, based upon a scientifically sound recipe.

A negative value must be assigned to the actions of kolkhoz and sovkhos specialists and even scientific workers who stubbornly ignore the use of carbamide concentrate in the mixed feed for livestock. The difficulties which arise among enterprises of the USSR Minkhlebo produkty [Ministry of Grain Products] in the use of carbamide concentrate -- underscore the inadequate skill level of the specialists and leaders. For months they may cope with the production of protein-poor mixed feed and lose considerable amounts of meat and milk in the process, while stubbornly ignoring the use of carbamide. Ideally, such specialists should be held strictly accountable for the harm inflicted upon animal husbandry operations.

During the discussion, active support was expressed for this new trend in the development of the mixed feed industry -- for the construction of inter-farm and intra-farm enterprises. In 1986, they produced approximately one third of the country's mixed feed production volume and the most inexpensive mixed feed at that.

The introduction of intensive grain production technologies, an increase in the cropping power of grain forage crops and the introduction of permanent annual plans for the sale of grain to the state -- these measures constitute the true path to be followed for ensuring that the mixed feed enterprises of kolkhozes and sovkhoses are reliably supplied with raw materials. At the Malayeshtskiy Sovkhoz in the Moldavian SSR, high corn and grain yields made it possible to commence the production of rich mixed feed for a dairy farm. The annual productivity of the sovkhos's herd of cows was raised on the average to 5,650 kilograms of milk.

Simultaneously, improvements must be realized in the supplying of mixed feed enterprises with balancing additives. Life has shown that the production of protein-vitamin additives (BVD's) at the present time at state mixed feed plants and the supplying of inter-farm mixed feed enterprises with these additives can restrain the development of the latter.

Actually, the state's protein feed resources are not unlimited and hence an increase in the production of BVD's at the same rate at which the mixed feed industry of kolkhozes and sovkhoses is developing is unrealistic.

It is proper to pose the question in the following manner: the additives obtained by inter-farm and intra-farm enterprises from state mixed feed plants must necessarily include an entire complex of macro and micro-components. The farms are obligated to produce their own protein feeds.

A group of Belorussian scientists who participated in the discussion reported on interesting results obtained from an experiment carried out at a hog raising complex of the Gorodishche Sovkhoz in Mogilev Oblast. During this experiment, a test was carried out on a balancing additive in the capacity of an OK [obogatitel kormov; feed enrichment agent]. The additive included macro and micro-elements, Vitamins D1 and B12, ferment preparations, the bacitracin antibiotic and the use of bran as a filler. The OK was introduced into mixed feed that was fed to young hog stock. The average daily increase in weight during the entire experiment was on the order of 600 grams and the feed expenditures per kilogram of weight increase amounted to 4.5-4.6 feed units.

The development of OK for hogs and cattle was recognized as a fine acquisition.

It is appropriate to mention that the production of various balancing additives is making it possible for a number of western countries to produce mixed feed directly on the farms. The owners of farms, using their own grain and purchasing the required balancing additives, are preparing rich mixed feed using their own resources and special equipment. Moreover, this feed is cheaper than that usually purchased. In the U.S.A., the proportion of mixed feed produced on farms is approximately 47 percent and in France, up to 50 percent.

In the past, a demonstration of the achievements of the mixed feed industry at the USSR VDNKh [Exhibition of Achievements of the National Economy of the USSR] served as a definite stimulus for obtaining high quality products and good production indicators in the work by collectives of mixed feed enterprises.

However, it is already a year since the large section entitled "Mixed Feed Industry" was eliminated in the "Feed" Pavilion. Today it is no longer possible to obtain information concerning mixed feed, feed additives or their quality and composition at the Animal Husbandry Pavilion or at the USSR VDNKh generally.

The state and inter-farm mixed feed industry plays an important role in carrying out the Food Program and yet a place has still not been found at the country's chief exhibit for displaying its achievements. This omission in the work of the VDNKh must be corrected.

The discussion of the problem of mixed feed quality has confronted science with a complex of new tasks. More studies must be carried out aimed at creating special mixed feed and premix recipes for highly productive animals that are being raised on the basis of intensive technologies.

New, effective and at the same time thrifty methods must actively be developed for the advance processing of mixed feed components, methods which will raise considerably the level of their use by livestock.

Research work concerned with expanding the raw material sources for the mixed feed industry should be continued. More attention should be given to utilizing the feed products of the sea and the waste products of the processing and food industry.

An important trend with regard to improving the mixed feed production technology and the quality of the products is that of improving the technological equipment, automating the production process and planning and building automatic plants.

The mixed feed industry cannot afford to ignore scientific-technical progress or the requirements associated with achieving high quality products. Improvements in the quality of the mixed feed will have a great effect on the rates for the intensification of animal husbandry operations.

The introduction of state acceptance can promote improvements in the quality of the output of mixed feed plants. Enterprises which supply the industrial animal husbandry complexes and poultry factories have been prepared more than others for organizing the state acceptance of mixed feeds and for checking them to ensure that they conform to the requirements set forth in the GOST's and OST's [All-Union Standards (1925-1932)]. This group of mixed feed enterprises can truly produce products of a higher level than the best foreign enterprises.

This fact is confirmed by the official competitive testing of mixed feed recipes for hogs, developed by VIZh specialists and the Central Soybean Firm (U.S.A.). Our mixed feeds turned out to be better -- the average daily weight increase in animals during the raising and fattening period turned out to be 862 grams and during the last 45 days of fattening -- 1,040 grams. Moreover, only 3.24 feed units were expended per kilogram of weight increase.

The country's research centers have a high scientific potential at their disposal and the mixed feed industry -- trained cadres of personnel and equipment. In strengthening the raw material base, this will make it possible with the passage of time to convert all industry over to the production only of high quality mixed feed.

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DOCUMENTARY DISCUSSES PAST, FUTURE ENERGY POLICY

LD202207 [Editorial Report] Moscow Television Service in Russian at 1350 GMT on 20 June transmits a 1-hour documentary, which is the first in a series entitled "Energy Strategy of the Party." This first part is entitled "Choice of a Path." The documentary looks back at Soviet energy policy since the revolution, discussing the way in which hydro-electric and atomic energy can adversely affect other industries and the environment. It dwells on the lessons of the energy crisis of the 1970's and outlines promising avenues for the energy industry in the future, with particular reference to energy saving.

The program opens with documentary footage of the early years of Soviet electrification, the Dneproges project, and the development of the coal and oil industries. The documentary says it was important to prevent the Baku oil-fields falling into Hitler's hands during the war.

After the war, the film continues, it proved "more convenient" to build earthen dams in the European part of the USSR rather than technically complex thermal power stations. This gave rise to "all the attendant consequences" which are felt to this day. On the Volga, "the interests of the power workers, farmers, and fishermen are at odds." (Aleksey Aleksandrovich Romanov), director of Kuybyshev GES, notes the "sorrow" of power workers that more than 12,500 cubic meters of water per second pass through the power station dam and that around 3,500 million kwh of electricity are lost overall during the spring high water. Against the background of Toktugul Ges dam and reservoir, (Balakdek Immanaleyev), chief engineer of the hydro-electric power station, laments that today the level of water in the reservoir has dropped by more than 30 meters and around 2,500 million kwh are lost every year. He blames "mismanagement" in the use of water for irrigation.

Filmed against the background of the damaged power station at Chernobyl, Academician Legasov says: "Today of course, one must not treat atomic power stations--or indeed any other complex technology--in the way the fourth set was treated just prior to the accident. Technical and organizational measures must be taken to rule out such situations in the future." The voice-over notes that "everything started with one mistake," but the "capacities of our whole state had to be mobilized to eliminate its consequences." "While we render due homage to the heroes of Chernobyl, we are obliged at the same time to give the guilty men of Chernobyl their full and just deserts." Legasov says that both in the Soviet Union and abroad there is a belief that atomic energy is here to stay.

Switching to energy problems in the West, the film says that when it comes to a choice between profits, on the one hand, and progress and the interests of the working people on the other, the monopolies choose the former.

Although the energy crisis of the seventies "did not affect us directly," the program says, the USSR did draw lessons from it and drew up an energy program. Aleksey Aleksandrovich Makarov, described as a prominent energy specialist, says that the program formulates three main tasks. First, energy saving. Hitherto, it has been introduced at a rate of about 0.5 percent per annum, while today saving must be accelerated five-fold in order to reduce the energy content of our national income [energoyemkost natsdokhoda] by 40 percent by the year 2000. Second, until the mid-nineties natural gas must replace oil in production growth in such a way that their relative weight in overall energy resource production remains unchanged. The idea is to win time for developing coal and nuclear power, which will subsequently provide the main growth in energy resources. Third, labor productivity increases must be such that the further development of the energy sector will not require additional personnel.

Over footage of Sayan-Shushenskoye GES, the commentary states: "It is no secret to anybody that if we were working on the Sayan-Shushenskoye GES project today, and not 20 years ago, we would do it differently, in a more modern way. In spending so much time over the construction of Sayan-Shushenskoye GES, we have, as it were, acknowledged our scientific and technical inertia."

The film concludes by showing how energy savings are being made at enterprises and factories, and by appealing for savings of heat and electricity by the population at large.

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NEW METHODS OF OIL PROSPECTING

Baku AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 3, Mar 87 pp 4-8

[Article by R.I. Rustamov of AzNIPIneft [Azerbaijan Scientific Research and Planning Institute for the Petroleum Industry]: "A Technique for Finding New Accumulations of Oil in the Central Kura Depression"]

[Text] Rapid growth was noted in exploratory operations on the territory of the Central Kura Depression in 1976-1985 associated with the discovery of oilfields: Muradkhanly, Zardob-Shikhabagi, Dzhafarli and Tarsdallyar. Despite an increase in drilling volumes, the efficiency of prospecting and surveying has not changed substantially.

In order to raise the efficiency of exploratory operations and fulfill tasks in preparing oil and gas reserves, we will consider basic questions of the technique for prospecting logically by stages of exploratory operations based on the examples of the Yevlakh-Agdzhabedi trough and the area between the Kura and the Iori rivers.

One important factor affecting the efficiency of exploratory operations in every region is the extent of knowledge of regional geological and geophysical operations and drilling. These operations, executed in the regions under consideration, have turned out to be quite efficient overall. As a result, the surface of the consolidated crust has been mapped, the lower strata of the volcanic-sediment Mesozoic complex have been studied and the boundaries of the trough and the overall thickness of the volcanic-sediment mantle have been established, within the limits of which the drilling and seismic survey of MOGT [expansion unknown] have singled out three complexes of deposits that are of the greatest interest in relation to oil content: the Mesozoic, Paleogene and Miocene. According to the data of gravity and magnetic survey, tectonic layouts have been composed of the Paleogene-Mesozoic structural level.

The results of the geophysical operations were supplemented and elaborated with data of the parametric wells, which were done basically at the beginning of the study of the depression. The structure of the individual zones was elaborated and the oil content of the deeply loaded strata of the Paleogene (Eocene) and Upper Cretaceous was confirmed through an aggregation of the results of parametric drilling.

The data obtained made it possible to uncover the structural tectonic features of the principal oil- and gas-bearing complexes, in that manner preparing the initial basis for the start of exploration.

The geological effectiveness of regional operations, however, was substantially diminished for the following reasons:

--the low precision of the seismic and geological constructions for the principal seismic strata (SG-II, SG-III and SG-IV). The drilling materials on the structures differs considerably from the seismic survey data. Thus, in the Sazhdag area parametric well 1 with a planned depth of 4,000 m [meters] should have uncovered the Upper Cretaceous, but at that depth the well actually had not left the Maykop deposits. In the Tarsdallyar area, the difference in the markers was about 300 m, and for the Amirarkh, 250 m;

--the insufficiently precise tracking of the seismic strata makes their stratification more difficult and makes equations of these strata both within the limits of a single area and for the whole region overall ambiguous.

Notwithstanding certain successes in resolving regional tasks, the amount of regional geological and geophysical research carried out is still not sufficient, since it declined sharply in the depression after the discovery of the fields. Thus, in the area between the Kura and Iori rivers, the amount of parametric drilling out of the overall volume of exploratory operations declined from 65.5 percent in 1976-1980 to 14.7 percent in 1981-1984. Out of six parametric wells drilled here, three fulfilled the tasks posed.

Taking into account the great importance of research at the regional stage and the failure to resolve a series of geological tasks, these operations should be renewed on a qualitatively new basis. It is essential to develop for this purpose as a minimum 2-3 regional profiles in each trough with the application of more efficient methodology.

It currently seems expedient, when detailed survey operations prevail and at the same time the geological structure of the depression is still insufficiently studied in this region, that all regional research and detailed surveys conducted in parallel be aimed at specifically selected sections.

To select the paramount sections for detailed operations in the Yevlakh-Agdzhabedi trough, the execution of three geological and geophysical profiles and the drilling of parametric wells in the Tazakend area (1) was recommended. In the area between the Kura and Iori rivers in the eastern and southern sections of the oblast, two regional seismic profiles with the aggregation of gravity, magnetic and electronic surveys were recommended. The drilling of 2-3 parametric wells in each profile with the maximum uncovering of the Upper Cretaceous cross section is proposed in the operations plan for this oblast.

Analysis of prospecting operations for the 9th and 10th five-year plans shows an increase in their volume. The operations are conducted in two areas: the Paleogene and the Mesozoic. The share of survey drilling of the overall volume of exploration in the Yevlakh-Agdzhabedi trough in the 10th Five-Year Plan was 32.4 percent, and in the 11th it increased to 47.6 percent. In the

area between the Kura and Iori rivers, the share of survey drilling over the 10th Five-Year Plan totaled 34.4 percent, i.e. the principal volume was parametric drilling, and in the 11th Five-Year Plan it increased to 45.4 percent. After the discovery of the Tarsdallyar Field in 1983, the volume of survey drilling declined sharply (by almost 2.5 times) compared to exploratory drilling. This correlation of drilling volumes was preserved in 1985 as well.

A logical and empirical ratio was established: the lesser the reserves of fields discovered, the greater the share of prospecting operations should be.

Based on the results in determining the share of survey drilling (2), the pattern of exploratory drilling for this period should be 9.5 percent parametric, 50.5 percent prospecting and 40 percent survey. In confirmation of the aforementioned, it should be noted that the share of survey drilling in the pattern of drilling operations in the Dnepr-Don Depression comprised 54 percent, and in the United States it is greater than 80 percent, which makes it possible to discover a large quantity of small fields (3).

The low volume of survey drilling (an average of 18,000 m a year) and the small quantity of areas put under drilling (from 1 to 4) for the depression under consideration (and over 1978-1982 not a single area was put into operation) had an effect on the discovery of new fields, i.e. on the success factor, which was 0.12-0.20 in 1981, 1983 and 1984.

A most important stage of the exploration process is preparing local structures (areas) for deep survey drilling, which has an immediate effect on the efficiency of exploratory drilling.

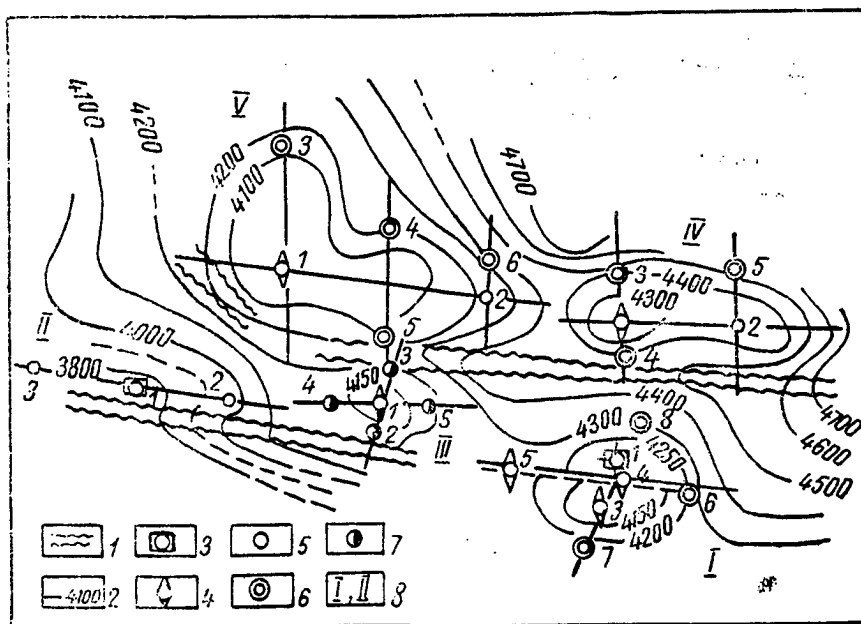
On 1 Jan 85, the stock of prepared structures for these troughs was 16 and had increased by 12.5 percent compared to the prior year.

The number of areas placed in deep drilling has also practically not changed, with the exception of 1985.

The basic stock of prepared structures is shallow, with depths of prospective strata of 3.5 to 5 km [kilometers], and therefore great precision in seismic research in preparing areas for deep drilling is essential.

MOGT seismic survey is currently the principal type of preparation of structures for survey drilling. The technique for preparing areas is reduced to the creation of a polygon network of seismic profiles, basically located at 0.5-2-km intervals, across the strike of the structure being studied. The density of the network of profiles is usually 1.46-4.21 km/km² and provides for the preparation of the structure. The drilling data of the exploratory wells, however, displays discrepancies from the markers of the seismic strata.

The difficulties in mapping the seismic surveys of local uplifts are the inadequate knowledge of vertical and horizontal changes in the velocity characteristics of the sediment layer; in order to study them, a certain number of parametric wells is required in which research on the VSP and SK [expansions unknown] could have been conducted.



System of drilling prospecting and survey wells in structures of the southeast portion of the area between the Kura and Iori rivers

1--complex seismic information zone; 2--isolation by SG-III (Middle Eocene); 3--recommended parametric well; 4--survey wells being drilled; 5, 6, 7--recommended prospecting, survey and producing exploratory wells; 8--structures: I--Gyurzundag; II--Gedakash; III--West Gyurzundag; IV--B. Palantekyan; V--Akhtepe.

Two groups of systems of prospect drilling are employed--single wells and a profile system--in the troughs under consideration in prospecting the accumulations of oil in the structures, prepared basically in the two most promising strata (the Middle Eocene and the Upper Cretaceous).

The first group is the most efficient, insofar as it permits the prospecting of the largest quantity of structures with a minimal number of wells. This technique justifies itself where the oil content is proven, especially in prospecting in small structures and well studied sections of the trough. On the northeast side of the Yevlakh-Agdzhabedi trough, where oil accumulations were discovered in the Middle Eocene and Upper Cretaceous deposits, prospecting with solitary wells in prepared structures (Mursalsk, Kargali, Karabat, Shakhsuni, Mamedli and others) is most efficient. It should be taken into account herein that in establishing a complex geological structure of an uplift and with insufficient reliability of the stratigraphic markers of prospective strata, the drilling of survey wells should proceed according to a profile system.

Under a profile system (usually a survey "cross"), the survey wells are arranged depending on the geological, morphological and other features of the structure. Analysis of the stock of prepared structures has shown that

structures of isometric form or close to it predominate across the region. Half of the stock of structures is characterized by a correlation of the axes with the limits of from 1 to 2. Elongated-form structures with a correlation of axes of more than three are rarely encountered (4).

In connection with this morphology and under conditions where the limbs of the fold are steeper than the periclines, the expressiveness of the folds on the short axis is more well-defined. Here the arrangement of the first survey wells is carried out along the longitudinal profile, and then the drilling is across the transverse. This technique for prospecting is recommended for structures in the southwest portion of the area between the Kura and the Iori rivers (see figure).

It should be noted that depending on the results of well drilling, the location and sequencing of wells and profiles can change, i.e. the technique should be quite flexible.

The survey wells in the structures in this region are usually arranged at distances of 500 to 1,000 m, and sometimes this distance is increased to 2,000 m. The distance between profiles varies from 1.5 to 3 km.

The success of survey drilling for the number of productive wells was 71-100 percent in 1983-1984. In the 9th Five-Year Plan, however, the wells that concluded testing were basically non-productive. In order to raise the success rate of survey drilling, it is thus essential to improve operations at the prospecting stage. For this reason, detailed seismic survey operations should be carried out in coordination with the wells that have been drilled after the drilling of three wells where there is a considerable divergence of the drilling and seismic-survey data.

The problem of prospecting non-anticlinal accumulations arises as a consequence of the gradual decrease in the stock of structural traps, especially at comparatively small depths. Experience in prospecting such accumulations in our country and especially abroad (the United States and Canada) shows that the success rate of prospecting and the efficiency of the methods employed depends on a sufficiently high level of drilling of the territory. Thus, in the United States the prospecting of similar sites is becoming efficient with the achievement of an extent of drilling of certain territories to 800-900 m/km² (3).

The extent of drilling of the territory of the trough within the confines of the Muradkhanly--Zardob--Amirarkhskiy zone is 111 m/km², i.e. quite low. An analysis of all accumulated material for the purpose of singling out sections for the execution of experimental methodological operations, including geophysical, paleogeological etc., is essential for the successful prospecting of traps of a non-structural type within the confines of the trough.

Conclusions

Regional geological, geophysical and drilling operations have been conducted in insufficient volume, as a consequence of which many tasks require resolution. In planning and executing these operations, it is essential to

take into account that detailed prospecting predominates in the region, and therefore all types of research and detailed prospecting carried out in conjunction with it should be directed toward specifically selected promising sections. It is essential to increase the informativeness of parametric wells sharply.

A rational structure for exploratory drilling has been established: 9.5 percent for parametric, 50.5 for prospecting and 40 percent for survey.

The basic stock of prepared structures is shallow, with depths for the promising strata of 3.5 to 5 km, and therefore great precision in seismic research in preparing areas is essential, i.e. an improvement of the techniques and equipment for field observations and processing techniques. Furthermore, in considering low-amplitude sites, the velocity model of the areas should be carefully considered with wells and ground observations.

In order to raise the success rate of prospecting new accumulations, an increase in the utilization factor of the stock of prepared structures is essential, i.e. to evaluate the prospects of a large number of structures with a minimal number of wells (1-3).

In order to raise the success rate of prospect drilling in relation to the number of productive wells, it is necessary to improve work at the prospecting stage. Readings are being taken of formation pressure and temperature along with samplings of formation fluid for this purpose at all sites being tested. Furthermore, after drilling the first three wells, if there exist discrepancies in the drilling and seismic-survey data, additional detailed seismic-survey operations should be carried out.

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AZSSR SOCIALIST OBLIGATIONS FOR 1987 DETAILED

Baku AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 2, Feb 87 (signed to press 31 Mar 87) pp 1-6

[Article: "1987 Socialist Obligations for the Collectives of Enterprises and Organizations"; last paragraphs of each division are formal approbations of the obligations]

[Text] The workers, engineering and technical personnel and employees of the Azneft Production Association are working selflessly on fulfillment of the strategic course drawn up by the 27th CPSU Congress and the 31st Azerbaijan Communist Party Congress.

In striving to make a worthy contribution to accelerating social-economic development and intensifying production on the basis of scientific-technical progress, and in response to the Appeal of the CPSU Central Committee, the USSR Council of Ministers, the All-Union Central Trade Union Council and the Komsomol Central Committee "On All-Union Socialist Competition for Successful Fulfillment of the Assignments of the 12th Five-Year Plan," the workers, engineering and technical personnel and employees of the Azneft Production Association are adopting, for 1987 and the 12th Five-Year Plan, the following socialist obligations:

Ensuring, on the basis of further improvement in production and intensification of the economic system, the extraction of 4,000 tons of oil above the plan, including 3,000 tons by the 70th anniversary of the Great October Revolution; 10 million m³ of gas, including 8 million m³ by the 70th anniversary of the Great October Revolution;

Ensuring above-plan sale of industrial output worth 355,000 rubles, and obtaining 500,000 rubles of above-plan profit.

Outlined for fulfillment of this are:

Extracting 4,000 tons of oil above the goal, through new methods of raising the oil-yield of the beds;

Reactivating five wells above the established assignment;

Carrying out, above the plan, 200 geological-technical measures and 40 operations to actuate the bottom-hole area of the wells;

Pumping 200,000 m³ of water above the plan to support the bed pressure;

Transferring, for injection, five wells above the plan from the operating resources;

Ensuring a further rise in the quality of underground wells and capital repair of wells;

Waging a systematic struggle to raise the standard of production through improving the maintenance of the work places and work and leisure conditions for the workers;

Utilizing to the maximum the reserves for labor productivity increase, raising the quality of well construction, reducing the cost per meter of tunneling by 1 percent and drilling 1500 m above the plan in operational drilling;

Putting two extracting wells above the plan into operation;

Ensuring construction of 75 percent of the extracting wells through the brigade contracting method; opening up an oil and gas bed; precisely defining the structure of the Gyurzundag area for Eocene deposits, in order to direct further exploration operations;

Through concentrating capital investments on underway construction projects and reducing the number of newly begun projects, bringing the volume of uncompleted construction to the normative level, and raising labor productivity in construction by 1 percent as against the plan;

Obtaining an economic effect amounting to 3 million rubles on the basis of raising the quality of the developments, accelerating their use in production, introducing new equipment and advanced technology, mechanization and automation of production processes and using inventions and efficiency expert proposals;

Introducing industrial processes with lower consumption of energy resources, replacing and modernizing industrial and power equipment, establishing strict monitoring of adherence to optimal work conditions for the units, and on the basis of this, saving: 10,800,000 kW.hrs of electrical energy, 1700 kcal of thermal energy, 2,200 tons of boiler-furnace fuel (in standard units), 80 tons of metal, 50 tons of motor vehicle gasoline and 70 tons of diesel fuel;

Putting into operation 30,700 m² of available housing;

Completing the construction of sanitation and everyday objects in 1987, amounting to 334,000 rubles;

Recultivating and returning to their former agricultural use two hectares of land above the plan;

Adopting the necessary measures to improve the work supply through reinforcing the material-technical base of subsidiary enterprises, producing 130 tons of meat, live weight, 930,000 eggs, obtaining a grain harvest of 400 tons and a harvest of vegetables in sheltered soil of 23 tons;

Continuing work on improving the qualifications of workers and engineering and technical personnel; raising the qualifications of 50 workers and 30 members of the engineering and technical personnel; encompassing the economic education, in the 1986/87 school year, of 21,000 persons;

Approving and supporting the initiative of the work collectives of enterprises and organizations in the petroleum, petroleum refining and petrochemical industry of the Bashkir ASSR to intensify production and to ensure, in the years of the 12th Five-Year Plan, stabilization of petroleum extraction and its further growth; extracting, in the years of the five-year plan, 18,000 tons of oil above the plan, including 3000 tons each per year in 1988-1990;

Extracting in the five-year plan, above-plan gas in the amount of 45 million m³, including 10 million m³ in 1988 and 5 million m³ per year in 1989-1990;

Increasing the volume of drilling operations in the 12th Five-Year Plan, as compared with the 11th Five-Year Plan, by 22 percent and bringing the well-drilling volume to 510,000 m in 1990, through the growth of labor productivity, a rise in the quality of well-construction, saving resources and reducing the cost;

Ensuring the drilling of extracting wells by 6000 m above the plan, including 1000 m each yearly in 1988-1990;

Bringing oil extraction, through new methods of raising the oil yield of the beds (tertiary method), to 250,000 tons a year and extracting 1 million tons of oil in the 12th Five-Year Plan;

Doubling the between-repair period of well operation, as compared with the 11th Five-Year Plan;

Concentrating, in order to increase the efficiency of geological prospecting operations, the main volume of prospecting-exploration and geophysical operations in the most promising regions of Central and Western Azerbaijan along the Paleogenic-Mesozoic complex of deposits and the Lower Kurinskaya depression along the lowermost strata of the productive series;

Introducing 20 new sites for deep prospecting-exploration drilling;

With a view to improving the planning, reinforcing cost accounting, expanding rights and increasing the economic responsibility of the collectives for the growth of production efficiency, converting, beginning in 1987, to the new conditions of economic activity for the enterprise and the organization;

Increasing the encompassment by the brigade organization form and work incentive by 12 percent in the 12th Five-Year Plan;

Achieving a reduction in the sick rate for temporary loss of working capacity by at least 3 percent as against the planned indicator.

The workers, engineering and technical personnel and employees of the Azneft Production Association assure the Azerbaijan Communist Party Central Committee that they will meet the 70th Anniversary of the Great October Revolution with new work achievements and will make a worthy contribution to the solution of the problems determined by the 27th CPSU Congress and the 31st Azerbaijan Communist Party Congress.

The collective of the Azneft Production Association, in taking on the socialist obligations, is rousing the collectives of the Kasporneftegazprom, Turkmenneft and Gruzneft associations to socialist competition.

The socialist obligations were adopted in the work collectives and confirmed by the Azneft Production Association Council and the raykom of the Trade Union for Workers in the Oil and Gas Industry on 12 January 1987.

In the Kasporneftegazprom Production Association

The work collectives of the enterprises and organizations of the All-Union Kasporneftegazprom Production Association, in responding to the specific points in the resolutions of the 27th Party Congress, the 31st Azerbaijan Communist Party Congress and the June (1986) CPSU Central Committee Plenum, concentrated their efforts on all-out intensification of oil and gas extraction.

As the result of implementing a set of measures to accelerate building up and putting into operation promising deposits, introduce new equipment and technology and improve labor organization in 1986, the growth rate of the industrial output sale volume was 101.8 percent; extraction of oil with condensate rose by 199,000 tons, or 2.1 percent.

Some 6.7 million rubles worth of products were sold, and 33,200 tons of oil and 65 million m³ of gas were extracted over the yearly plan.

The planned goals for labor productivity were overfulfilled and the cost of commodity production was lowered, and there were profits in the industry.

A program outlined for housing construction by the association's own efforts was implemented. Some 43,400 m² of housing area were put into operation, which is 1.6-fold more than in 1985.

Unanimously supporting the party course for acceleration of the country's social and economic development, and striving to greet the 70th Anniversary of the Great October Socialist Revolution, the workers, engineering and technical personnel and employees of the association are adopting the following socialist obligations for 1987 and the 12th Five-Year Plan:

By actively carrying out the program of scientific-technical progress drawn up, making maximum use of production reserves and reinforcing discipline and organization, to achieve a 1.0 percent above-plan rise in labor productivity and

ensure, on this basis, an increase in the volume of industrial output sales of 15 million rubles, and in 1987--2 million rubles, including 1.7 million rubles by the 70th Anniversary of the Great October Revolution; ensure 100-percent fulfillment of the yearly plans for product sale, in consideration of the obligations for the supplies;

On the basis of putting promising deposits into operation at an accelerated pace, improving the technology for developing beds, optimizing the operation conditions for the existing well resources and increasing the operation coefficient and between-repair period for their work, extract, in the five-year plan, above the plan, 170,000 tons of oil, 200 million m³ of gas, and in 1987--40,000 tons of oil, 40 million m³ of gas, including, for the 70th Anniversary of the Great October Revolution--35,000 tons of oil and 35 million m³ of gas;

Increase the work volume on improving the secondary and expanding the tertiary methods of oil extraction; obtain, as the result of this, in the 12th Five-Year Plan, 100,000 tons of oil more than the established goal;

Implement an additional 550 geological-technical measures, including modern thermochemical and other methods of affecting the wells at the borehole area, and methods of combating complications when extracting oil and gas, with a total effect of 100,000 tons of oil;

By implementing the conversion to new methods of cost accounting and through increasing the production volume and better use of material and raw material resources, achieve a 1.0% above-plan reduction in the industrial production cost; obtain an additional profit for the five-year plan of at least 10 million rubles, and in 1987--1.5 million rubles, including 1.2 million rubles by the 70th Anniversary of the Great October Revolution;

Achieve a rise in product quality; ensure the supply of oil to the consumers of only the first and second quality groups, in accordance with state standards, including at least 80% in the first-quality group;

Through improving work organization, efficient use of floating drilling rigs and equipment and widescale use of the experience of leading brigades, increase the productivity time in drilling and complete the construction, above-plan, in 1987, of two wells and ensure progress, on the average, of at least 3500 m per PBU;

As the result of improving the economic mechanism in capital construction and using efficient forms and methods of carrying out operations and brigade and collective contracting, achieve a rise in quality and reduction in the periods for constructing the projects; carry out, in the 12th Five-Year Plan, above-plan construction and installation work and capital repair of offshore hydraulic engineering structures worth 4 million rubles, and in 1987--worth 1.5 million rubles; ensure putting into operation 14 stationary deep-water offshore platforms;

Implement a program of re-equipment and renovation of enterprises and structures, paying special attention to introducing automated control systems for the industrial processes for oil and gas extraction and drilling, and mechanization of

operations in installing and repairing wells and in construction; obtain a 40 million ruble economic effect from introducing measures for technical progress in the 12th Five-Year Plan, and in 1987--8 million rubles; reduce, by the end of the five-year plan, the relative proportion of workers engaged in manual labor, on the whole for the association by 7.5%, including 13.5% in industry;

Through introducing resource-saving technology and intensifying the regime of economy and thrift, save, in 1987, above the established assignments, 5 million kW·hrs of electrical energy, 485 tons of diesel fuel, 240 tons of motor vehicle gasoline, 3000 tons of boiler-furnace fuel (in standard units), 40 m³ of timber, 100 tons of cement, 70 tons of rolled ferrous metals and 100 tons of methanol;

Improve work on environmental conservation and pollution prevention for the Caspian Sea, ensure full utilization of the stratal waters in the oil and gas extracting enterprises and make more efficient use of the existing structures for water purification;

Achieve a radical improvement in the state of work safety practices and techniques and reduction in the level of illnesses at the enterprises of the association; implement, in the 12th Five-Year Plan, sanitation and health measures and measures to improve work conditions, amounting to a total of at least 1 million rubles a year;

Increase to the utmost the creative activity of the workers and engineering-technical personnel; achieve, in the 12th Five-Year Plan, from introducing efficiency expert proposals and inventions, an economic effect amounting to 33 million rubles, and in 1987--5.3 million rubles;

By carrying out a program of social development, introduce, in the 12th Five-Year Plan, 215,000 m² of housing area, including 10,000 m² above the plan, schools for 1,170 students, kindergartens for 560 children, polyclinics for 500 patients, two 150-bed hospitals and other objects for social and everyday purposes; support and widely disseminate the initiative of the collectives of the Kaspburneftegazprom and Chelekenmorneftegazprom production associations and the NGDU [oil and gas extracting administration] imeni N. Narimanov and imeni A.P. Serebrovskiy, entering, in 1987, into the construction of housing through their own efforts, with the motto, "We Ourselves Build--For Ourselves";

Sell 20,000 rubles worth of everyday services to the population above the plan in the 12th Five-Year Plan;

Ensure the further development of subsidiary farms; achieve, by the end of the five-year plan, meat production from them by at least 15 kg per worker per year; put into operation separate plots of land to produce grain, vegetables and fodder;

Constantly improve work on the moral-ideological education in the work collectives; yearly, in the 12th Five-Year Plan, draw at least 25,400 persons into economic education, train 1720 new workers and improve the skills of 7525 workers;

Widely disseminate the initiative, approved by the CPSU Central Committee, of the collectives headed by comrades V.M. Gvozdev, A.P. Potapov and V.L. Sidoreyko, on greeting the 70th Anniversary of the Great October Socialist Revolution in a worthy manner and fulfilling the plan for two years of the 12th Five-Year Plan and considerable labor productivity increase ahead of schedule.

The marine oil workers assure the CPSU Central Committee and the Azerbaijan Communist Party Central Committee that they will put all their efforts into fulfilling the socialist obligations taken on, will make a worthy contribution to the development of the country's fuel-energy complex and will greet the 70th Anniversary of the Great October Revolution with high labor achievements.

The collective of the Kasporneftegazprom All-Union Production Association proposes that the Azneft, Ukgazprom and Turkmengazprom associations continue socialist competition to increase production efficiency in the 12th Five-Year Plan.

The socialist obligations were discussed in the work collectives and adopted at the party-economic aktiv of the Kasporneftegazprom All-Union Production Association on 13 January 1987.

Ministry of the Petroleum Refining and Petrochemical Industry of the AzSSR

The work developed on putting into effect the aims of the 27th CPSU Congress and the 31st Congress of the Azerbaijan Communist Party, and the June (1986) Plenum of the CPSU Central Committee was unanimously supported and approved by the collectives of the republic's petroleum refining and petrochemical industry.

Inspired by the CPSU Central Committee Appeal to the workers of the Soviet Union on developing nation-wide socialist competition for the successful fulfillment and overfulfillment of the plans for the 12th Five-Year Plan and by the decree of the CPSU Central Committee, the USSR Council of Ministers, the All-Union Central Council of Trade Unions and the All-Union Komsomol, "On All-Union Socialist Competition for Successful Fulfillment of the Assignments of the 12th Five-Year Plan," the work collectives have actively engaged in carrying out the tasks of further acceleration of social-economic progress, have developed work competition on a broad scale and are displaying examples of innovative work.

The collectives of many enterprises, shops and sections have pledged themselves to fulfill the plan for two years of the five-year plan by the 70th Anniversary of the Great October Revolution. The initiative of the collective of the Gorkiy Motor Vehicle Plant for outstripping solution of the program problem--to provide an individual apartment for each family--has been supported and disseminated in the sector.

The workers of the petroleum refining and petrochemical industry of the AzSSR, in preparing for the transition to full cost accounting and self-financing and directing their efforts toward further intensification of production, acceleration of introducing the achievements of scientific-technical progress, toward the struggle for conservation of material and labor resources, for high labor

productivity, widescale use of advanced production experience and a worthy greeting of the 70th Anniversary of the Great October Socialist Revolution, are adopting the following socialist commitments for 1987 and the 12th Five-Year Plan:

Ensure an increase in labor productivity in 1987 by 0.5 % as against the established assignment. Obtain the entire growth in the production volume through increasing labor productivity;

Achieve above-plan profits in the amount of 500,000 rubles, and for the five-year plan by 2.5 million rubles, including 450,000 rubles by the 70th Anniversary of the Great October Revolution;

By reinforcing planning and production discipline to the utmost, achieve 100% fulfillment of the contractual obligations for supplies;

Ensure a 100% turnover of finished products for state acceptance;

Increase the intensity of processing petroleum by 0.5% as against the plan for 1987, and by 1990 by 10% as against the 1986 plan. Fulfill the assignment for intensity of petroleum refining by 58.7% by the 70th Anniversary of the Great October Revolution;

Ensure the output of consumer goods for the five-year plan worth a total of 10,980,000 rubles, including 2,080,000 rubles in 1987; produce an additional 6000 rubles worth of consumer goods by the 70th Anniversary of the Great October Revolution.

Through intensifying the regime of economy and utilizing secondary resources, work, in the five-year plan, at least eight days on the material and fuel-energy resources saved, ensuring their saving as against the approved norms:

| | |
|-------------------|--|
| Electrical energy | --40,000,000 kW·hrs (including 8,000,000 kW·hrs in 1987) |
| Thermal energy | --325,000 Gcal (65,000 Gcal) |
| Conventional fuel | --40,000 tons (8000 tons) |
| Barium hydroxide | --500 tons (100 tons) |
| Methanol | --275 tons (55 tons) |
| Caustic soda | --150 tons (30 tons) |
| Phenol | --75 tons (15 tons) |
| Carbamide | --15 tons (3 tons) |
| Sulfuric acid | --30 tons (6 tons) |

Work on saved energy resources on the day of the anniversary.

Through introducing organizational-technical measures reduce the losses of petroleum and petroleum products for the five-year period by 5000 tons, including 1000 tons in 1987.

Overfulfill the volume of contracting work by 50,000 rubles, which will make it possible to fulfill the planned volume on 30 December 1987.

Through funds earned by the work collectives, ensure a further improvement in domestic and recreation conditions for the workers in the sector and members of their families. Put into operation, by the 70th Anniversary of the Great October Revolution, 3,950 m² of available housing, and bring this figure up to 40,000 m² by 1990; complete the construction of a dispensary for 100 persons in the settlement of Mardak yana.

Ensure, in the 12th Five-Year Plan, putting into operation a unit to produce the additive IKhP-21 at the Sumgait Additive Plant;

Ensure that a complex of structures to purify the drainage from the Baku petroleum refineries be put into operation by the 70th Anniversary of the Great October Revolution;

Reduce the volume of water consumption by 3.0% as compared with the plan;

Implement a set of measures for environmental conservation;

Reduce the emissions of harmful substances into the atmosphere by 5.0% as compared with the plan;

In the 12th Five-Year Plan, ensure training, refresher-course training and instruction for second occupations and improve the skills of 11,000 workers, including 2,160 persons in 1987. Improve the qualifications of 1,525 managerial workers and specialists during the 12th Five-Year Plan, including 300 persons in 1987;

Bring the relative proportion of brigade-form coverage of work organization and incentive to 68%, and the number of those working under the conditions of brigade cost accounting--to 32% of the total number of workers;

In the 12th Five-Year Plan, achieve absolute realization of the assignments of the comprehensive plan for improving work safety conditions and sanitary-health measures for work safety procedures, utilizing funds in the amount of 6.6 million rubles;

In 1987, achieve full utilization of funds allocated for fulfillment of measures for work safety procedures, in the amount of 250,000 rubles;

Through introducing inventions and efficiency expert suggestions, obtain an economic effect of a total of 5 million rubles in 1987;

Provide general support and development of the initiatives of the country's leading collectives coming forth as initiators of ahead-of-schedule fulfillment of the plans for 1987 and the 12th Five-Year Plan as a whole.

The workers of the Ministry of the Petroleum Refining and Petrochemical Industry of the Azerbaijan SSR assure the Azerbaijan Communist Party Central Committee and the Azerbaijan SSR Council of Ministers that henceforth they will reinforce and augment, in every possible way, the progress achieved, will most actively participate in the widely developed socialist competition for a worthy greeting of the 70th Anniversary of the Great October Revolution and will exert every effort for successful fulfillment of the state plan for economic and social development in 1987 and the 12th Five-Year Plan.

The socialist commitments were adopted by the collectives of the enterprises and organizations of the AzSSR Ministry of the Petroleum and Petrochemical Industry and approved at a meeting of the collegium on 26 December 1986.

AzSSR State Committee for Gasification

The workers, engineering and technical personnel and employees of the AzSSR State Committee for Gasification, in consistently carrying out the tasks posed by the party for utmost increase in production efficiency, have actively engaged in all-union socialist competition for ahead-of-schedule fulfillment of the program of the 12th Five-Year Plan. The enterprises of the gas industry achieved considerable work progress in the first year of the five-year plan: they ensured an uninterrupted supply of gas for the consumers.

The enterprises of the AzSSR State Committee for Gasification, in the 12th Five-Year Plan, sold 16.2 billion m³ of natural and 51,200 tons of compressed gas, sold 9,790,000 rubles worth of domestic services to the population and gasified 40,500 apartments, including 38,000 apartments in the rural area.

Some 105 cities and settlements of the urban type and over 3,250 rural population centers have been reached with natural and compressed gas. Over 700 industrial projects, over 13,000 municipal and everyday and cultural institutions and over 1600 boiler houses consume gas as fuel and raw material.

The number of gasified apartments for the republic is, as of 1 July 1986, 1,207,900, including 369,000 in the rural area.

As of 1 July 1986, the level of gasification coverage of the available housing was 92.9%, including urban--97.8 and rural--86.5%.

Having risen to shock-work duty in honor of the 70th Anniversary of the Great October Socialist Revolution, the collective of the AzSSR State Committee for Gasification is striving to mark the first year and the 12th Five-Year Plan as a whole with new labor successes. Through improving the forms and methods of socialist competition, creative use of the initiative of leading workers and innovators in production, utmost increase in labor productivity, production cost reduction, introducing the achievements of technical progress and developing and mobilizing all the latent and unutilized reserves for production, the workers, engineering and technical personnel and employees of the enterprises and organizations of the AzSSR State Committee for Gasification, after studying their potentials, are adopting the following socialist commitments for 1987:

For Basic Activity

Fulfill the year's plan for receiving and selling natural gas by 28 December 1987 and sell 150 million m³ of gas in addition.

Fulfill the year's plan for selling compressed gas by 30 December 1987.

Reduce the production cost of each thousand cubic meters of natural gas sold by 0.2%, per ton of domestic compressed gas by 1% and obtain a saving of 65,000 rubles from reducing the production cost.

Through intensifying work on capital repair of gas pipelines, efficient fulfillment and elimination of the causes of gas leakage and optimizing the operating conditions of the gas pipelines, reduce the losses of gas during transport by 10 million m³ as against the specified plan.

Through mobilizing additional intra-economic reserves and intensifying the regime of economy, obtain an above-plan profit amounting to 300,000 rubles in 1987.

Through carrying out assignments to introduce new equipment and advanced experience, and introducing efficiency expert suggestions into production, obtain an economic effect of at least 200,000 rubles.

Raise the quality of service and efficiency of using underground gas pipeline shields in 1987.

Train, provide refresher training and instruct 220 workers for second occupations and improve the qualifications of engineering and technical personnel and workers--678 persons. Instruct 4700 persons in a system of economic education.

For Industry

Fulfill the 1987 plan for production volume by 28 December 1987 and sell additional output worth 30,000 rubles.

Produce, in physical terms, 10 tons of compressed gas above the plan.

Work systematically to raise the quality of the output.

Through a general and strict regime of economy and thrift, achieve a saving of at least 50 tons of conventional fuel and 40,000 kW·hrs of electrical energy.

For Construction

Fulfill the year's plan for contracting work on 30 December 1987 and perform an additional 87,000 rubles worth of work.

Utilize an additional 50,000 rubles worth of capital investments for projects of the AzSSR State Committee for Gasification.

Bring the level of gasification for the republic's available housing to 93.0% by the end of 1987, including 98.0 for urban and 86.0% for rural.

Raise the quality of construction and installation work and ensure that projects be turned over for a rating of "good" and "excellent."

Provide natural gas to the city of Vartashen and over 40 kolkhozes and sovkhozes.

Accelerate work rates on gasifying rural population centers.

Carry out preparation for receiving natural gas in the towns of Kakhi and Zardob and over 30 rural population centers.

Complete the construction of the Saatly-Imishli gas pipeline-branch.

Provide 500 apartments above the year's plan with natural gas.

Achieve a 1% increase in labor productivity above the plan.

Exceed the goal for reducing production cost by 0.5%.

For Everyday Services

Render an additional 50,000 rubles worth of service to the population, including 40,000 rubles in the rural area through above-plan sale of compressed gas in the amount of 100 tons.

In order to improve municipal and everyday service to the population, replace 6000 household and gas appliances.

The socialist obligations were discussed in the collectives of the enterprises and organizations and adopted at an extended session of the collegium of the AzSSR State Committee for Gasification on 24 December 1986.

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OFFSHORE OIL, GAS EXTRACTION MANAGEMENT STUDIED

Baku AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 2, Feb 87 (signed to press 31 Mar 87) pp 56-60

[Article by A.M. Sass (GNIPIGipromorneftegaz): "A Methodology for Improving the Management of Utilization of Fixed Production Capital for Offshore Oil and Gas Extraction"]

[Text] Under the conditions of a constant increase in the scale and growth rates of fixed production capital (OPF), there is a sharp rise in the expenditure of material, labor and financial resources to create, introduce, operate, modernize and maintain them in efficient working condition. To heighten the efficiency of using OPF with the considerably growing scale of industrial production, a systemic approach to OPF management must be introduced on a broader scale.

The Kaspromorneftegazprom All-Union Production Association is developing and introducing a system of management of the use of OPF for offshore oil and gas extraction [1, 2]. The special feature in the formation of the organizational structure and economic mechanism of the management system is the individualization and regulation of the aims, functions and tasks for the objects of management and the methodological development and detailization of the system of planning-estimate indicators of the use of OPF and the norms for their consumption.

In the course of working out the "Methodological Recommendations for Improving the Management of the Use of OPF in the Oil and Gas Extraction Association (for Offshore Oil and Gas Extraction)" [1], the need was revealed for a bilateral (resources, input) description of the economic processes taking place within the framework of an enterprise (association) among the material, labor and financial resources, their input and the target end results (Fig. 1).

The resource indicator (capital-output ratio) has been widely discussed in economic literature and is used in economic practice.

This article is devoted to solving the methodological problem of working out the input indicator (input-capital-output ratio). The input-capital-output ratio should reflect both the active effect from utilizing OPF and the full input to obtain it. In this case, one should essentially proceed from the

basic assumptions of the methodology for determining the economic effectiveness of using new equipment in the national economy [3], in accordance with which, as applied to OPF, the comprehensive indicator \mathcal{E}_Φ should commensurate the target end result with the aggregate input to achieve it:

$$\mathcal{E}_\Phi = \frac{Q}{3}, \quad (1)$$

where Q is the active effect from using OPF (in physical or cost terms); 3 is the aggregate input to achieve Q , in thousand rubles.

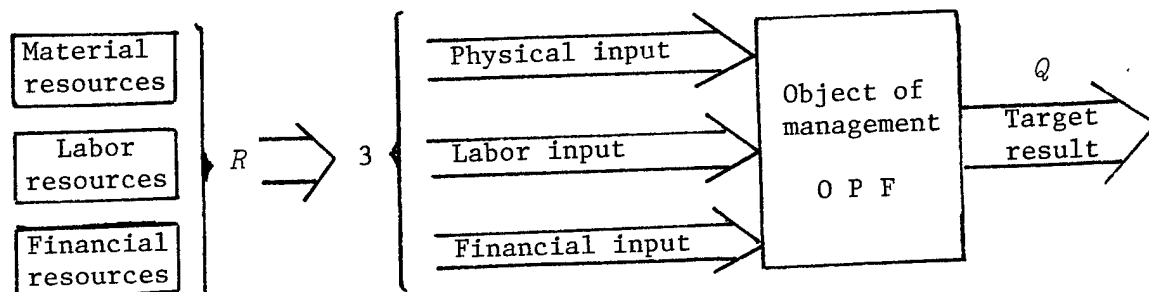


Fig. 1. Diagram of the Economic Processes of the OPF Utilization of an Association (Enterprise)

The comprehensive indicator \mathcal{E}_Φ can be determined for both the entire service period of OPF and for a shorter period (year, quarter, month).

In commensurating the active effect from using OPF of the i type with the aggregate expenditures (direct, indirect and attendant) to obtain it, the value of 3 in formula (1) should contain the expenditures for the entire life cycle of OPF, i.e., the expenditures for the development (scientific research work, designing, industrial manufacture and construction), introduction (transport, storage, installation, start-up and adjustment), operation, maintenance (technical service and routine repair and maintenance), capital repair, renovation and elimination. In accordance with the above, a formula is given below for calculation of the comprehensive indicator of the input-capital-output ratio, and content and method of determining the indicators included in this formula:

$$\mathcal{E}_{\Phi_i} = \frac{Q_i}{3_i} = \frac{C_i}{\frac{3_{c_i} + 3_{b_i} + 3_{n_i}}{T_{n_i}} + 3_{s_i} + 3_{r.o_i} + 3_{r.p_i} + 3_{k.p_i} + 3_{m_i}} \quad (2)$$

| Indicator | Method of Determining |
|---|--|
| Q_i is the production volume of goods with i OPF, in thousand rubles. | Data for the section or planning-accounting sub-division, relating to basic and ancillary production. |
| T_{H_i} is the normative operation time of i OPF, in years. | Data determined from approved depreciation norms or from statistical calculations. |
| $З_{ci}$ are expenditures to develop i OPF, in thousand rubles. | $З_{ci} = З_{НИР} + З_n + З_{и.п} + З_{ст},$ where $З_{НИР}$ are expenditures for scientific research work; $З_n$ are design expenditures; $З_{и.п}$ are expenditures for industrial manufacture; $З_{ст}$ are expenditures for construction. |
| $З_{bi}$ are expenditures for introducing i OPF, in thousand rubles. | $З_{bi} = З_r + З_x + З_{mo} + З_H,$ where $З_r$ are expenditures for transport; $З_x$ are expenditures for storage; $З_{mo}$ are expenditures for installation; $З_H$ are expenditures for start-up, adjustment work. |
| $З_{pi}$ are expenditures for operation of i OPF, in thousand rubles. | $З_{pi} = C_{3.т}^3 + C_{3.т}^r + C_{3.п},$ where $C_{3.т}^3$ are energy and fuel consumption in the operating process; $C_{3.т}^r$ are consumption of energy and fuel used in the industrial process in operation of OPF; $C_{3.п}$ are the basic and supplementary wages and social insurance withholdings for workers employed in OPF operation. |
| $З_{т.oi}$ are expenditures for technical service of i OPF, in thousand rubles. | $З_{т.oi} = C_{м.3.т}^{т.о} + C_{3.п}^{т.о} + A^{т.о} + C_y^{т.о},$ where $C_{м.3.т}^{т.о}$ is consumption of materials, energy, fuel during technical service; $C_{3.п}^{т.о}$ are basic and supplementary wages and social insurance withholdings for workers employed during technical service; $A^{т.о}$ is depreciation of equipment used in technical service; $C_y^{т.о}$ is the cost of services of ancillary production related to technical service. |
| $З_{т.пи}$ are expenditures for routine repair, maintenance of i OPF, in thousand rubles. | $З_{т.пи} = C_{м.3.т}^{т.р} + C_{3.п}^{т.р} + A^{т.р} + C_y^{т.р}$ |

$\mathcal{Z}_{\kappa p_i}$ are expenditures for capital repair of i OPF, in thousand rubles.

\mathcal{Z}_{M_i} are expenditures for modernizing i OPF, in thousand rubles.

$$\mathcal{Z}_{\kappa p_i} = C_{M, \mathcal{Z}, T}^{\kappa, p} + C_{\mathcal{Z}, \Pi}^{\kappa, p} + A^{\kappa, p} + C_y^{\kappa, p}$$

$$\mathcal{Z}_{M_i} = \mathcal{Z}_{\Pi}^M + C_{M, \mathcal{Z}, T}^M + C_{\mathcal{Z}, \Pi}^M + A^M,$$

where \mathcal{Z}_{Π}^M are expenditures for design-research work on modernization; $C_{M, \mathcal{Z}, T}^M$ are consumption of materials, energy, fuel in modernizing; $C_{\mathcal{Z}, \Pi}^M$ are basic and supplementary wages and social insurance withholdings for workers employed in modernization; A^M is depreciation of equipment used in modernizing.

\mathcal{Z}_{κ_i} are expenditures for liquidating worn-out and obsolete i OPF, in thousand rubles

$$\mathcal{Z}_{\kappa_i} = \mathcal{Z}_{\kappa, p} - C_{\kappa_i}$$

where $\mathcal{Z}_{\kappa, p}$ are expenditures for liquidation work; C_{κ_i} is the liquidation cost of OPF.

Let us examine the general case; the association (enterprise) produces n types of physical product. Then the OPF system of the association (enterprise) can be broken down into n subsystems, each of which will describe the production of a physical product of a certain type. In accordance with the type structure of the oil and gas extracting enterprises (NGDP), instructions for planning, accounting and calculation of the cost of oil and gas extraction [4, pp 15, 16 and 91] and consideration of the specific features of offshore gas extraction, Fig. 2 shows a generalized diagram of the system of OPF for NGDP and its component subsystems, using the example of the Kasporneftegazprom All-Union Production Association. By using a generalized diagram of the system of OPF for offshore oil and gas extraction, it is possible to single out the necessary subsystem and determine the comprehensive input-capital-output ratio for the system. Given below are the formula and method of calculating \mathcal{Z}_{ϕ_i} for the oil and gas extraction section (TsDNG):

$$\mathcal{Z}_{\phi_i} = \frac{Q_1}{\mathcal{Z}_1} = \frac{Q_1}{A_1 + \mathcal{Z}_{\mathcal{Z}_1} + \mathcal{Z}_{\kappa, p_1} + \mathcal{Z}_{\kappa, p_i}}. \quad (3)$$

Indicator

Method of Determining

Q_1 is oil and gas extraction, in thousand rubles

Data from records of TsDNG and PEO [planning-economic department] of NGDP

T_{n_i} is the normative service period, in years

Oil wells--15 years
Gas wells--12 years

A_1 are the depreciation deductions for full restoration, in thousand rubles

Accounting data on well depreciation.

$3_{\text{э}}$ are the operating expenditures, in thousand rubles.

$$3_{\text{э.п}} = C_{\text{э.п}} + C_{\text{в.г}} + C_{\text{г}} + C_{\text{а}} + C_{\text{з.п}},$$

where $C_{\text{э.п}}$ is the cost of the electrical energy consumed to start up the pumping jacks and electric centrifugal immersion pumps; $C_{\text{в.г}}$ is the cost of compressed air and gas required in the compressor method of oil extraction; $C_{\text{г}}$ is the cost of the gas used in a compressorless gas lift; $C_{\text{а}}$ is the cost of the working fluid used in PPD; $C_{\text{з.п}}$ are the basic and supplementary wages and social insurance withholdings for TsDNG workers.

$3_{\text{н.р}}$ are expenditures for underground repair, in thousand rubles.

$$3_{\text{н.р.1}} = C_{\text{м.э.т}}^{\text{н.р}} + C_{\text{з.п}}^{\text{н.р}} + A^{\text{н.р}} + C_{\text{у}}^{\text{н.р}},$$

where $C_{\text{м.э.т}}^{\text{н.р}}$ are consumption of materials, energy, fuel during underground repair;

$C_{\text{з.п}}^{\text{н.р}}$ are the basic and supplementary wages and social insurance withholdings for workers employed in underground repair; $A^{\text{н.р}}$ is depreciation of equipment used in underground repair; $C_{\text{у}}^{\text{н.р}}$ is the cost of services of ancillary production facilities connected with underground repair.

$3_{\text{к.р}}$ are expenditures for capital repair, in thousand rubles

$$3_{\text{к.р.1}} = C_{\text{м.э.т}}^{\text{к.р}} + C_{\text{з.п}}^{\text{к.р}} + A^{\text{к.р}} + C_{\text{у}}^{\text{к.р}}$$

Indicators of the capital-output ratio and the input-capital-output ratio can be normative, planned and actual. In the process of controlling the utilization of OPF, using only absolute values for the indicators does not fully ensure the aims of the management. Therefore, controlling the utilization of OPF assumes the presence of relative values (criteria of control), which create the prerequisites for making efficient managerial decisions in the area being examined. It is recommended that the relation of the actual value of the appropriate indicator to the planned (normative) one be used as criteria of control over the utilization of OPF.

Therefore, in improving management of the utilization of OPF for offshore oil and gas extraction in the structure of the planning-evaluation indicators, it is expedient to include the following indicators as generalizing: resource (capital-output ratio) expenditure (input-capital-output ratio). Through changing the values of the resource indicator, an aggregate of permissible managerial decisions on the utilization of OPF, which meet the requirements of the input (consumption cost of OPF) and output (active effect from using OPF) restrictions, is formed. To ascertain the most successful managerial decisions on utilization of OPF, an expenditure indicator is used. It makes it possible to commensurate the active effect from utilizing OPF with the operating and once-only expenditures, adjusted to an identical scale, and directly related

to the functioning of the means of labor. This approach creates real conditions for increasing the efficiency of utilizing OPF through revealing the resources and internal reserves by levels of management everywhere: the planning-accounting subdivision-NGDP-association, and leads [2] to obtaining positive results.

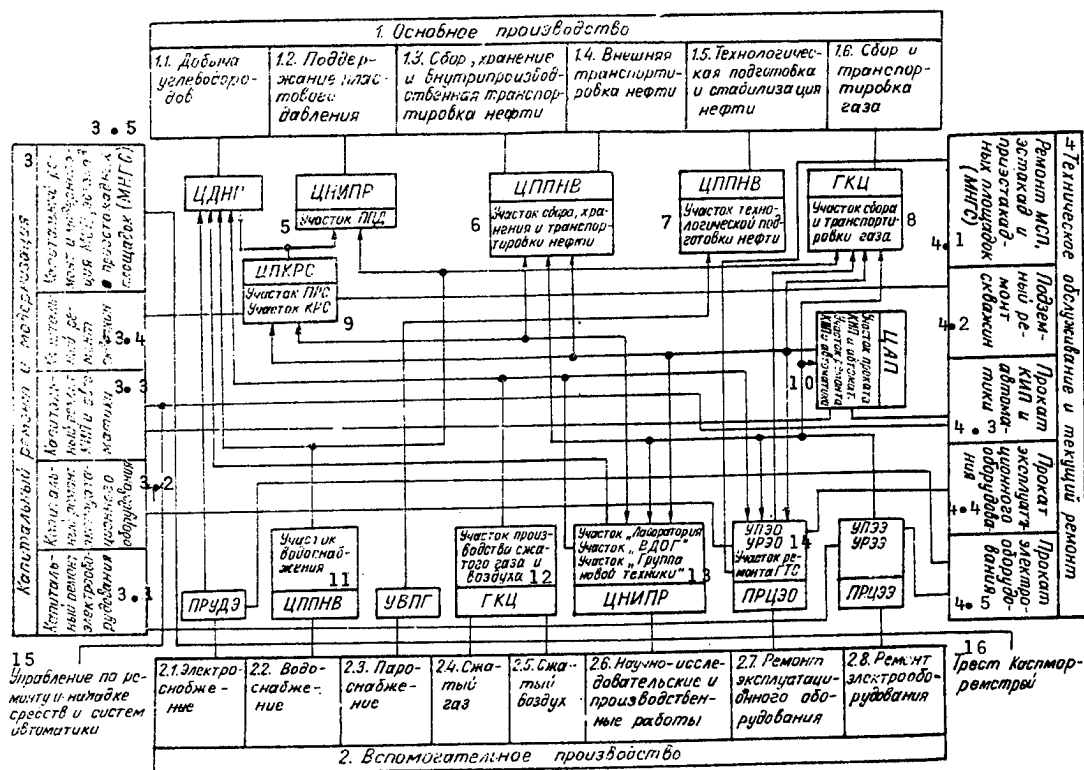


Fig. 2. Generalized Diagram of the System of OPF of NGDP:

ЦДНГ--oil and gas extraction section; ЦППНВ--section for complete preparation and pumping of oil and water; ГКЦ--gas compressor section; ЦПКРС--section for underground and capital repair of wells; ЦНИПР--section for scientific research and production work; ЦАП--production automation section; ПРЦЭО--rolling-repair section for operations equipment; ПРЦЭЭ--rolling-repair section for electrical equipment and electrical supply; ПРЦДЭ--rolling-repair section for diesel electric power plants; УВПГ--water selection and steam generation section; УПЭО and УРЭО--respectively, rolling and repair of operating equipment sections; УРЭЭ and УРЭЭ--respectively, rolling and repair of electrical equipment and electrical supply sections; ГТС--hydraulic engineering structures; МСП--stationary offshore platforms; МНГС--offshore oil and gas industry structures.

Key:

1. Basic Production
- 1.1 hydrocarbon extraction
- 1.2 bed pressure maintenance

[Key continued on following page]

[Key continued]

- 1.3. collecting, storing and intraproduction transport of oil.
- 1.4. outside transport of oil.
- 1.5. industrial preparation and stabilization of oil.
- 1.6. collection and transport of gas.

- 2. Ancillary Production.
 - 2.1. electrical supply.
 - 2.2. water supply.
 - 2.3. steam supply.
 - 2.4. compressed gas.
 - 2.5. compressed air.
 - 2.6. scientific research and production work.
 - 2.7. repair of operations equipment.
 - 2.8. repair of electrical equipment.

- 3. Capital Repair and Modernization.
 - 3.1. capital repair of electrical equipment.
 - 3.2. capital repair of operations equipment.
 - 3.3. capital repair of KIP and automated units.
 - 3.4. capital repair of [illegible]
 - 3.5. capital repair of MOP, trestles and trestle areas (MRGS)

- 4. Technical Service and Routine Repair.
 - 4.1. repair of MSP, trestles and trestle areas.
 - 4.2. underground well repair.
 - 4.3. rolling of KIP and automated units.
 - 4.4. rolling of operations equipment.
 - 4.5. rolling of electrical equipment.

- 5. PID section.
- 6. Section for collecting, storage and transport of oil.
- 7. Section for industrial preparation of oil.
- 8. Section for collecting and transport of gas.
- 9. PRS section/KRS section.
- 10. Section for rolling KIP and automated units. Section for KIP and automated unit repair.
- 11. Water supply section.
- 12. Section for compressed gas and air production
- 13. Section for laboratory/"VDOG" section/"new equipment group" section.
- 14. GTS repair section.
- 15. Management of repair and adjustment of automation means and systems.
- 16. Kaspomorretstroy Trust.

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DISASSEMBLY OF OFFSHORE CASPIAN OIL PLATFORM

Baku AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 3, Mar 87 pp 42-44

[Article by S.A. Khanbekov of Kaspimorneftegazprom [Caspian Offshore Oil and Gas Industry] VPO [Scientific Production Association] under the rubric "Oil and the Sea": "The Disassembly of Stationary Offshore Platforms"]

[Text] Fixed offshore drilling platforms (FODP), along with other types of hydraulic engineering structures (pier platforms, hydraulic-fill dams), are employed, as a rule, for the development of oil and gas fields.

In the event of a shortage of floating offshore drilling platforms (jack-ups, semisubmersibles or drilling vessels) or the impossibility of using them due to the ocean conditions, the engineering geology of the sea bottom, the anticipated field characteristics of the field etc., FODPs are also used in exploratory drilling, including surveying, and are included among the set of infrastructure facilities for exploratory structures.

FODPs were widely employed on the Caspian Sea up until to 1980 for organizing both operational and survey drilling alike.

This was facilitated, along with a number of other factors, by the high success rate of exploratory wells (60-70 percent and more) and the relatively small metals-intensiveness of FODPs at ocean depths of up to 30 m [meters], within the limits of which their construction was basically accomplished.

The conversion of exploratory wells into the ranks of producing wells with the presence of FODPs requires relatively small material, labor and financial expenditures.

A certain quantity of FODPs, as a result of the elimination of the wells existing at them or the removal of their process equipment, with time lose their national-economic significance and are written off the balance sheets of the enterprises.

Scattered throughout the extensive oil- and gas-field water area of the Caspian, these platforms make navigation and fishing more difficult and hinder the laying of underwater pipelines and cables and the construction of new hydraulic engineering structures; the installation of navigational lights on

them that are in constant need of maintenance is required to ensure navigational safety; potential sources of scrap metal and sometimes of metal structural elements are not utilized (there are over 300 FODPs in the Caspian that have lost their significance).

For their part, environmental-protection organizations are demanding the elimination of non-utilized structures in offshore oil and gas fields.

The question arises of the disassembly of unused FODPs. In acute productive necessity (for instance, in the course of post-accident restoration work), a certain quantity of pilings of the oil- and gas-field structures were disassembled at various times in the Caspian as an experiment using various equipment and technology (electric vibrators, electric-arc and flame cutting, pipe cutters, drilling the ground around the pilings etc.).

Not one of these methods, however, was widely disseminated due to the high labor intensiveness and low efficiency of the operations.

Efforts were also made to disassemble FODPs. One platform of pile design at a depth of 7 m was disassembled over the course of four calendar months with the aid of electric-flame cutting.

A plan was developed to disassemble an FODP at an ocean depth of 10-15 m that was not implemented due to a failure to resolve organizational and technical questions.

The dragged-out search for the optimal technology for disassembling FODPs has led to unsystematic actions. Certain disassembled structural elements (intermediate sections, pedestrian bridges, berthing and landing areas, platform pedestals), depending on their condition, were used repeatedly or sent off as scrap.

A method of cutting metal under water with 650-gram elongated hollow-charge explosive substances has been developed and tested in our country in recent years. Means of dampening the shock waves and scaring fish away from the work zone have also been developed.

The proposed method makes it possible to cut tubing elements of up to 530 mm [millimeters] in diameter and up to 19 mm thick, and is recommended for cutting the supports of pier structures, electrical-transmission and communication lines, pipelines etc.

Stationary Platform No 1 in the Black Sea was disassembled with the aid of the method described. The underwater blasting operations were carried out by two scuba divers, while the preliminary operations and supplemental monitoring of the results of the cutting were handled by a diver in a rigid diving suit. The cutting of three or four pipes arranged one after the other, i.e. the total thickness of the cutting barrier of pipe and cement (without taking the core into account) was 35-36 mm, was implemented simultaneously to accelerate the cutting operations with the blasting of the support struts. Some 96 pipes were cut by blasting over 15 days in the process of disassembly of the underwater portion of the support units.

In order to organize the disassembly of FODPs, as well as other hydraulic engineering structures, on a broad commercial scale, it is essential:

1. To develop and approve a standard guiding document for the disassembly of FODPs, in which should be indicated:

--the equipment and technology for the underwater wellheads of the eliminated wells;

--the allowable rise above the ocean floor of the portions of the structure remaining after disassembly;

--measures to protect fish life (taking into account the possible retention of some FODPs as refuges and feeding bases for the young of valuable fish;

2. To create a shore base for receiving, sorting, cleaning of overgrowth, restoring or dismantling for scrap and storing the disassembled metal structural elements. The base should be equipped with berths, highway sidings, work areas with lifting cranes, crane ships (with 40- to 300-ton capacity cranes), oxygen stations, electric-power substations etc.

It is also essential to continue scientific research and experimental design work on creating new equipment and technology for disassembly (the application of lasers, hydraulic and thermal cutting, electric and mechanical saws, special pontoons etc.) and cleaning the internal cavity of the anchor pilings of cement and stays for giving them over to scrap.

Regardless of the equipment and technology employed, in all cases the disassembly of FODPs (and other hydraulic engineering structures) does not have an economic impact. Thus, for example, the value of 1 ton of metal in fact comprises 570-600 rubles under the conditions under consideration, while the theoretical value of 1 tons of dismantled structural elements is 450-500 rubles. Moreover, in the best case 30 percent of the disassembled structural elements can be reused.

The principal factor in favor of the disassembly of FODPs and other hydraulic engineering structures should thus be considered the possibility of restoring the ecological equilibrium of the surrounding environment. As of 1 Jan 86, about 300 FODPs in the Caspian were subject to disassembly.

A six-unit FODP is employed at ocean depths of 18 m. The mass of the metal structural elements above the ocean bottom is 1,000 tons.

Six above-water units of 25 tons each, six intermediate sections of 11 tons, eight berth and landing sections of 9 tons and one pedestrian bridge of 22 tons (310 tons in all) are disassembled.

Some 30 percent of the total mass of the structural elements consists of the anchoring support struts (300 tons). This metal cannot be given over to scrap, insofar as the internal cavities of the struts are filled with hardened cement.

The remaining portion (390 tons of metal) can be given over to scrap.

Taking the aforementioned into account, the use of the anchor pilings for the support units for the rigid frames of reinforced-concrete masses, pilings and bearing columns, masts etc. in industrial and civil construction is recommended.

The use of FODPs in exploratory drilling should be eliminated. The structural elements of floating drilling rigs should be improved to reduce limitations on their employment.

Structural elements for FODPS that can be disassembled should be created. In order to reduce the volume of FODP disassembly, the discovery of water areas and the compilation of a map where it would be expedient to leave these structures as refuges and feeding bases for the young of fish is proposed.

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NEW OFFSHORE PLATFORM DESIGNS

Baku AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 2, Feb 87 (signed to press 31 Mar 87) pp 44-47

[Article by A.G. Sokolov, Ye.P. Morozov, M.A. Gusev, S.S. Nefedov and K.V. Polyak, TsNII proyektstalkonstruktsiya imeni Melnikov [Central Scientific Research and Planning Institute of Metal Building Structures imeni Melnikov]: "New Structural Designs and Full-Scale Studies of Deep-Water Foundations"]

[Text] In order to establish efficient types of rod structures for monoblock supporting parts of platforms, for varying sea depths, a number of variants of supports for sea depths of 110 and 300 meters were analyzed from the technical and economic standpoint and compared.

It was established as the result of the analysis that the most economical variants of the supporting section are those constructed by using the principle of concentration of material. In accordance with this principle, it is expedient to reduce the number of basic stanchion-chords for the space truss of the supporting block.

The most economical variants, recommended for use (tetra- and octahedral), could be obtained with eight basic stanchions, including four stanchion-chords for additional parallel "building" trusses with the space between them being equal to the space between the building tracks of the plant installation area.

These trusses take the loads from the mass of the block during installation and its move to the means of transport and its lowering into the sea. In addition, the chord of the building trusses contributes to more efficient transfer of the vertical effective load from the mass of the block-modules of the upper structure to the base, and a uniform load of the basic (passing inside the chords) and additional piles.

The structure of the pile foundation can also be selected by using the principle of concentration of material. It appeared expedient to group the additional piles in four zones, located between the surfaces of the transverse contoured faces of the block and the building trusses. A few additional piles, secured in the pile connecting pieces, interlinked by a grid and the block chords, can be placed in a row in each zone. The number of piles in the zone may vary, depending on the depth of the sea, the level of the loads and the soil conditions. Here, the basic structural design remains unchanged.

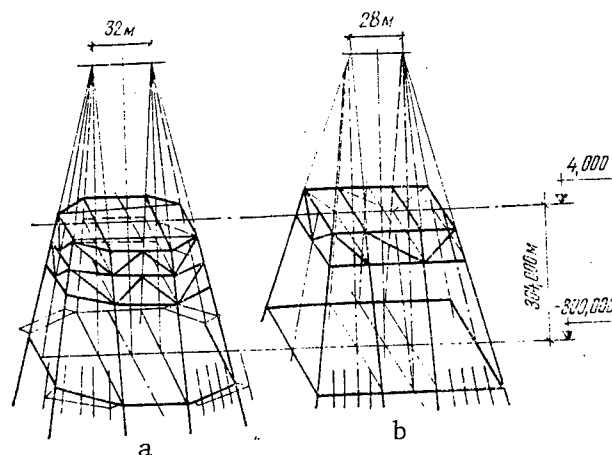


Fig. 1. The Geometric Structure of Platform Support Blocks

The rod system of a support block is a combination of truncated wedges (the central part of the block between the building trusses) and two pyramids, attached to the parallel faces of the wedge (Fig. 1, a). The axes of the stanchions placed in the corners of the pyramids converge at two points (apexes), located on the same level with respect to height (b).

The pyramidal sections of the block make it possible to use the principles of similarity when partitioning the block with horizontal diaphragms. This permitted the achievement of a certain standardization of the nodes of the pipe rods by means of identical angles of approach, repeated along the height of the rods.

The supporting structures of deep-sea platforms often include elements in the form of cylindrical casings, reinforced by longitudinal (stringers) and circular (ring frames) ribs, with buoyancy (Fig. 2).

Optimization for the mass of the casing of the element, compressed by the longitudinal force P , is considered, on the condition that the internal pressure in the casing is kept equal to the pressure of the environment. The supporting capacity of the element is determined by the firmness of the casing.

If the mass of the casing is characterized by its adjusted thickness

$$t = t_0 + \frac{t_1 h_1}{\pi d} n + \frac{t_2 h_2}{a}, \quad (1)$$

where n —is the number of stringers, then with the values of d and a given according to the structural considerations, the task of optimizing this value for t_0 , t_1 , t_2 , h_1 , h_2 and n , with the restrictions $P \geq [P]$ and $t \geq t_{\min}$ can be reduced to determining $\min(t)$. Here, $P = \sigma_{01} F$ is the supporting capacity of the casing with respect to firmness; $\sigma_{01} = 2\gamma E t_0 d$ are the critical stresses of the casing; E is Young's modulus; $F = \pi d t_0 + n t_1 h_1$ is the area of the transverse section of the casing.

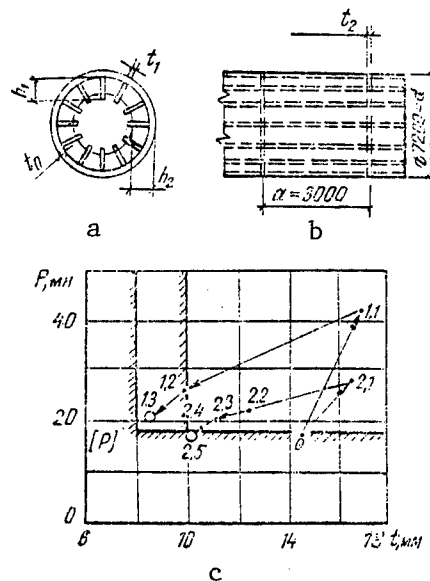


Figure 2. The Determining Condition:

• is the rigidity of the panel; ◦ is the rigidity for the orthogonal assymetric form

The parameter of critical stresses n is determined on an electronic computer by minimization for the different forms of loss of rigidity. In a number of the latter there was an examination of panel, orthotropic and also specific forms of loss of rigidity arising when the network of bucklings and depressions appear to be linked with the rib network. For each form the value of n was determined by minimization according to the number of longitudinal and circular waves, using the method of random search with self-instruction and omission.

The casing was optimized by using the method of sorting in the dialog mode. A determinant form of the rigidity loss was issued by the program for each variant, which made it possible to estimate which elements of the casing needed strengthening, and to select the direction of the next step in a substantiated manner.

As a result, two variants of optimal casings, differing in the number of stringers, were found: nos 1.3 and 2.4. Although casing No 2.4 was essentially more metal-intensive than casing No 1.3, the former was not excluded from discussion, since, having fewer stringers, it is less labor-intensive.

A characteristic feature of the search process is the shift in the determinant form of the loss of rigidity close to the optimal point. This attests to the fact that, in the optimization process, the casing is modified in the direction of achieving uniform rigidity.

One of the promising directions for improving the structural designs of deep-water supports is the use of water-filled tubular stanchions, supplied with

pistons acting as vertical supporting elements. In traditional offshore structures, the mass of the superstructure with the engineering equipment, production and housing facilities is transferred directly to the tubular stanchions, which causes prolonged compression in them. These stresses reach 70% of the total stress from the calculated combination of external effects. The shortcoming in these designs is the under-utilization of the reserves of supporting capacity for compression of the tubular stanchions which, essentially, are the casings, and the resulting increase in their metal-intensiveness. At the same time, filling the hollows of the stanchions with water when installing the structures in the sea makes it possible to utilize the potentials of their work in tension in the circular direction through supporting the superstructure on the inner water column by means of the piston introduced into the hollow of the stanchion. Studies showed that the most efficient was redistribution, in the determined proportion of the mass load between the stanchion proper and the "piston-water-stanchion" system.

Regulation of the redistribution of the mass load can be structurally realized by using a conical insert in the upper part of the stanchion (Fig. 3). In this case, the estimated values of the stresses in the stanchions can be reduced by 5-10%, as compared with the traditional designs of deep-water supports, and a corresponding reduction in the metal-intensiveness can be achieved.

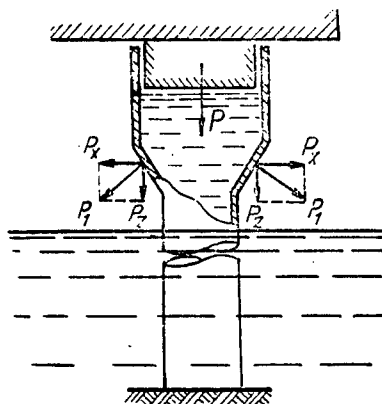


Fig. 3. Diagram of the Structure of a Water-Filled Stanchion

Full-scale tests are of decisive importance in testing the adequacy of the existing methods of calculating offshore platforms for wave action. They were made on a platform placed at a depth of 30 m, and consisted of synchronous measurements of the parameters of marine swells with stringed wave recorders, and of the shifts of the platform with piezoaccelerometers.

In the course of carrying out full-scale tests, two phenomena, new in principle, were established. They accompanied the vibrations of the offshore structures due to wave action. The first is the weakening of the correlation between the wave process and the shifts of the platform in a frequency range above $\omega=0,2 \Gamma u$. The second is the vibration of the platform at low frequencies, in the range of frequencies of the diffracting groups of waves.

To estimate the first phenomenon in dynamic calculation of the marine structures for wave action, it is proposed that there be introduced as a cofactor into the basic calculation expression

$$S_p(\omega) = S_s(\omega) H_r(\omega) H_m(\omega) \quad (2)$$

(where $S_p(\omega)$ is the reaction spectrum of the structure; $S_s(\omega)$ is the sea wave function; $H_r(\omega)$ is the hydrodynamic transmission function; $H_m(\omega)$ is the mechanical transmission function) the function of the square of the coherence (or spectral coherence) $k^2(\omega)$ between the rise of the sea surface during a swell and the components of the orbital speeds of the fluid particles, determined experimentally, which makes possible quite a substantial reduction in the estimated reaction of the structures at frequencies close to the intrinsic frequencies of the vibrations of the marine platforms (0.2 - 1 Hz). This is in accordance with the data from the full-scale tests.

The effect of the wave groups on the marine structure can be explained in the following manner.

By examining the group structure of the sea waves as a low-frequency modulation of the basic harmonics in the wave spectrum, we have, in consideration of the nonlinear effects of the sea swell, as well as the constant currents, coinciding with the direction of wave dissemination:

$$\eta(t) = h_0(\sin \omega t + a)(1 + m \sin \Omega t), \quad (3)$$

where η is the ordinate of the sea surface; Ω is the frequency of the diffracting group of waves; m is the modulation depth; a is the relationship of the amount of deviation from the undisturbed level at the trough of the wave to the amount of deviation at the crest.

In accordance with formula (3), the expression for the horizontal component of orbital velocity in the wave, allowing for the group structure, may be written in the form

$$v = v_0(\sin \omega t + b)(1 + m \sin \Omega t), \quad (4)$$

where b is the absolute value of the relationship of the velocity in the wave trough to the velocity at the crest.

By using the Lappo-Morison formula, we obtain the expression for the specific wave load on the structural element, allowing for the group structure of the waves

$$Q = \frac{1}{2} \rho d C_x v_0^2 (\sin \omega t + b)^2 (m \sin \Omega t + 1)^2 \operatorname{sign} v_0 + \frac{\pi \rho d^2 C_m v_0}{4} \frac{d}{dt} (\sin \omega t \times \\ \times m \sin \Omega t + b m \Omega t + \sin \omega t + b), \quad (5)$$

where ρ is the density of the fluid; d is the diameter of the element; C_x , C_m are respectively the coefficients of the head resistance and the adjusted mass.

We will rewrite expression (5) in the form:

$$Q = \frac{1}{2} \rho d C_x v_0^2 [(\sin^2 \omega t + 2m \sin \omega t + \\ + b^2)(m^2 \sin^2 \Omega t + 2m \sin \Omega t + \\ + 1) \sin v_0 + \frac{\pi \rho d C_m v_0}{4} (\omega \cos \omega t m \times \\ \times \sin \Omega t + \Omega \sin \omega t m \cos \Omega t + \\ + b m \Omega \cos \Omega t + \omega \cos \omega t).$$

It follows from expression (10) that, in the load spectrum, there are two low-frequency components with a frequency of the diffracting wave group

$$\frac{\rho d C_x v_0^2 b^2 m^2 \sin \Omega t;}{4},$$

as well as the low-frequency component

$$\rho d C_x v_0^2 b^2 m^2 \cos 2 \Omega t$$

with a frequency equal to the doubled frequency of the diffracting wave group. When $m < 0.5$, this component is lower by a factor of four than the component with a frequency of Ω , and cannot be considered in the first approximation.

The low-frequency component from the inertial load is multiplied by the factor Ω , which is low in value. Therefore, it can also be disregarded in the first approximation.

The theoretical analysis, just as the experimental data, thus attests to the potential for marine structure vibrations with the frequency of the diffracting wave group.

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ROVENSKOYE PEAT ASSOCIATION RESULTS, PLANS

Moscow TORFYANAYA PROMYSHLENNOST in Russian No 5, May 87 pp 5-7

[Article by engineer V.I. Pismennyy of the Rovenskoye Peat Association under the rubric "The Work of Peat Enterprises under the New Management Conditions": "The Rovenskoye Peat Association at the Start of the 12th Five-Year Plan"]

[Text] The strategy of acceleration developed by the 27th CPSU Congress envisages an increase in the rate of economic development. Its essence is the utmost intensification of production on the basis of scientific and technical progress, a structural restructuring of the economy and efficient forms of management, organization and labor incentives.

The tasks of the 12th Five-Year Plan envisage an increase in the volume of commodity output at the association of 11.1 percent and a rise in labor productivity of 9.6 percent. Through the incorporation of measures of technical progress, an economy of 322,000 rubles is planned as a result of reductions in product cost along with the freeing up of 130 people through increases in the technical level of production.

The peat association has developed a Comprehensive Program of Acceleration of Scientific and Technical Progress for the 12th Five-Year Plan and a Program of Output of Consumer Goods and Services for the 12th Five-Year Plan, the measures of which are aimed at reaching the projected targets in the economic and social development of the collectives of the enterprises.

Some 2.8 million rubles of capital investment is planned in the 12th Five-Year Plan aimed at maintaining production capacity for peat extraction for the raw-materials base for the enterprises, along with 2.75 million rubles for technical retooling (replacing functionally obsolete and physically depreciated equipment). A new peat briquette plant [TBZ] with capacity of 30,000 tons of briquettes a year is planned for construction in Rovno Oblast.

Along with this, it is necessary to assimilate 2 million rubles of capital investment for the social and domestic needs of the association's workers: some 9,000 square meters of well-appointed housing will be built along with children's pre-school institutions with 290 places.

Since 1986, the labor collectives of the association's enterprises have been working under new management conditions. The goals and tasks of the new methods are increasing the volume of production, raising its quality, reducing expenditures for product output, raising labor productivity, expanding the rights of enterprises and increasing the responsibility of enterprise executives.

The new management conditions will undoubtedly have a positive influence on the activity of the collectives of the association. The targets for the first year of the five-year plan for the sale of commodity output by the peat association were fulfilled by 104 percent, along with 102.8 percent for the volume of industrial output and 112.2 percent for peat extraction, while labor productivity increased by 103.3 percent compared to the plan. Over the course of ten months of the year, the association has fulfilled the sales plan with a regard for delivery obligations. It is, however, 97.3 percent fulfilled overall according to the results of operations, since one of the eight enterprises of the association did not deal successfully with this indicator.

It should be noted that in 1986 the peat association operated considerably better than in the preceding year. Thus, 859,000 rubles more of commodity output was sold. The volume of industrial output increased by 6.1 percent. The volumes of extraction of rotary-cut peat increased by 23,000 tons, as did peat for agriculture by 30,000 tons and the production of briquettes and semi-briquettes by 25,800 tons. New types of products were assimilated: peat in bales, packaged peat (for gardeners) and peat-and-coal briquettes (with the addition of the by-products of coal-drilling briquetting). Losses declined by 214,000 rubles compared to the plan.

With a reduction of 18 in the number of personnel, payments from the wage fund and the material-incentives fund were increased by 166,300 rubles.

Labor discipline increased, and avoidable losses of work time were reduced by 21.9 percent, while the number of workers absent declined to 41 people.

The entire increase in industrial output (831,000 rubles) was obtained through growth in labor productivity.

Deductions for the material-incentives fund and the fund for social and cultural functions and housing construction increased in the past year according to the actual results of work compared to the plan.

Due to the failure to fulfill the plan for deliveries, however, deductions for the material-incentives fund were diminished.

As a result of the incorporation of new-equipment measures over the year, 32 people were freed up and an economy from reductions in product cost was obtained. Some 110 efficiency proposals were incorporated with an economic impact of 193,800 rubles.

The average monthly wage of the industrial-production personnel increased by 6.2 percent in 1986 compared to the preceding year with an increase in labor productivity of 6.9 percent.

Some 1.455 million rubles of capital investment were assimilated, of which 600,000 rubles were for technical retooling. The introduction of 168,000 tons of capacity for peat extraction, or 51,000 tons higher than in the plan, was ensured.

In the first half of the year, an 8-unit apartment house was built at the Manevichskiy TBZ, and at the end of the year an 8-unit residential building with an area of 465 square meters was turned over to the workers of the Kremennoye TBZ.

The first year of operation under the new conditions demonstrated that a good base is essential for successful work. By way of example, in 1985, in view of the difficult weather conditions, the plan for the basic product range (peat extraction and briquette production) was not fulfilled and the volume of industrial output was supplemented with the production of other types of products with smaller labor expenditures. In 1986, more than 1.22 million rubles of peat products were produced with a decline of 188,000 rubles in the output of other non-peat products, which increased labor expenditures significantly and, naturally, required a large wage fund. Bonuses from the material-incentives fund furthermore increased.

In the face of such a structural shift in product output, the peat association did not have the opportunity of confining itself to the base wage fund and bringing the growth rate of wage increase and labor productivity into the correct correlation, the more so as the standard for increasing the wage fund for a 1-percent increase in gross product output as approved for the association is 0.3, while the existing material-incentive fund could not be spent for worker bonuses.

Some 856 people, or 69.1 percent of the personnel complement, in the association were encompassed by team forms of labor organization, and 515 people are working under conditions of economic accountability. Raising the wage scales of workers employed in briquetting (apparatus operators, briquette-press operators, transport workers) entailed differences of opinion in the collective teams, since in the integrated economically accountable teams operating under a single order with payment for the ultimate results, there are stokers, dumpers and fitters for equipment repair (duty personnel) whose wages remained as before.

As a result of the establishment of a base wage fund for 1986, certain enterprises and associations overall allowed it to be overspent in the 2nd quarter, while in the third quarter, to cover overspending without changing the standard increase in the average wage, for each percentage point of increase in labor productivity, the material-incentive fund was reduced.

In view of the lack of economy in wages, supplemental payments to workers for high qualification levels were not increased and salaries for workers were not set in place of wages scales, so that the full effect of the new management methods was not felt in the peat association, even though production indicators improved considerably compared to 1985.

Entering into the second year of the 12th Five-Year Plan, the association has projected measures to improve operations aimed at ensuring the planned growth rate of production, the fulfillment of obligations for product deliveries and an increase in the role of economic incentives in achieving highly productive labor.

It is necessary to reinforce executive discipline at all levels from the worker and team leader to the shop chief and enterprise executive, improve the structure of management and wages, eliminate unfounded supplemental payments and bonuses and review the standards for manufacture, i.e. wages should be brought into complete correspondence with the labor contribution of every employee. Large reserves are being uncovered by the job certification that is underway.

Along with technical retooling and the mechanization and automation of production processes, progressive forms of labor organization, and first and foremost the collective contract and economic accountability at all production levels, will be employed more and more at the enterprises.

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LEGAL PROTECTION SOUGHT FOR PEAT RESOURCES IN BSSR

Moscow TORFYANAYA PROMYSHLENNOST in Russian No 5, May 87 pp 18-21

[Article by Candidate of Juridical Sciences L.N. Moroz of the Institute of Philosophy and Law of the BSSR Academy of Sciences: "Improving the Legal Regulation of Peat Extraction--An Important Condition for the Efficient Use and Protection of the Peat Resources of the BSSR"]

[Text] The Leninist decree "The Land," which proclaimed the land, mineral resources, forests and waters the property of all the people, was the foundation of the appearance of Soviet legislation on the rational use of nature, on the basis of the fundamental provisions of which were published the decrees "The Forests" of 27 May 18 and "The Mineral Wealth of the Land" of 27 Apr 20, juridically consolidating the socialist procedure for the use of practically all natural resources. These legislative documents, however, do not contain instructions on the nationalization and rules for the assimilation of the marshes, although at that time relations in the use of peat resources were being developed quite intensively, chiefly in the extraction of peat for fuel and for cultivational purposes.

The lack of legislative regulation of the complex circle of these relations engendered uncertainty in the legal situation of peat resources and created a competition of the interests of various sectors of the national economy in the process of assimilation and preconditions for their irrational exploitation. By virtue of their disposition on the surface of the earth and the dual nature of the dedicated purpose of peat resources (peat extraction and cultivation), as early as 1918 a dispute flared up between the Narkomzem [Soviet of People's Commissars [SNK] of Cultivation and Glavtorf [Main Peat Administration], created within the Main Fuel Administration along with the Main Coal and Main Petroleum administrations, on the correlation of the marshes with the land and the mineral resources. Guided by departmental interests, the representatives of land organs numbered peat resources among cultivation sites, while the workers of Glavtorf, on the contrary, considered them minerals. On the other hand, the "ownerless" status of the peat resources and their increased private-enterpreneurial assimilation during the NEP period contradicted the principle of nationalization of natural resources and socialist procedure for the use of nature.

Desiring to curtail the difference of opinion that had arisen between Narkomzem and Glavtorf and in that manner ensure a stable supply of cheap fuel for electric-power engineering, industry and domestic use, as well as to impart unified state and legal principles to the use of peat resources, V.I. Lenin proposed their transfer of the marshes to land management organs. In the event of the failure of land organs to assimilate them and the recognition of a specific body of peat suitable for peat extraction, it should be turned over to Glavtorf or other interested enterprises or organizations for development, upon the conclusion of which the area freed of peat was subject to return to its former cultivation (1).

This approach to determining the economic purpose of peat resources was economically and ecologically justified. First, the allocation of certain peat deposits for cultivation sites or mineral exploitation came to depend on the actual purposes of its assimilation--cultivation or peat extraction. Second, equating the legal status of the process of cultivation and peat extraction under the specific historical circumstances make possible the optimal satisfaction of the need for it in various sectors of the economy. Third, the temporary nature of peat extraction and the subsequent transfer of the areas that had been worked to cultivation obliged the peat producers to exploit rationally the peat deposits given over to them.

This Leninist idea was subsequently embodied in the RSFSR SNK decree of 17 May 22 and decree of the BSSR SNK of 9 Jun 22 "Peat Marshes," according to which all peat marshes constituted a special state peat fund under the control and disposal of the Soviets of People's Commissars for Cultivation and used for agricultural, experimental-demonstration and other cultivational purposes. Marshes not used by land users that had commercial reserves of peat were leased by various peat producers for development.

Along with declaring the marshes the exclusive property of the state and the definition of the types and general procedure for their utilizations, the "Peat Marshes" decrees served as the legal basis for the publication of a whole series of legal norms on peat resources that regulated various aspects of their economic utilization. Somewhat of a lag in the given sphere of scholarly legal thought and the uneven nature of the distribution of marshes on the territory of the country moreover caused an orientation of the practice of legal creation on regulating issues of assimilating and protecting peat resources primarily at the level of the union republics, which continued right into the 1970s. More than two hundred normative legal documents on peat resources, simultaneously or separately regulating procedure for the extraction and rational utilization of peat and the recultivation and subsequent agricultural, timber or water-management assimilation of the peat workings, as well as the drainage of peat deposits, have been published in Belorussia in particular since the adoption of the RSFSR SNK "Peat Marshes" decree.

In recognizing peat as a useful mineral, the legislation of the republic on peat resources nonetheless does not include processes of exploration for peat reserves and the extraction of peat among mineral use, although in practice they are justly considered various types of mining activity. Only with the appearance of theoretical legal developments on problems of geological study

of mineral resources and the regulation of mineral extraction, including peat, in the republic legal codes on mineral resources Foundations of Legislation of the USSR and the Union Republics on Mineral Resources adopted by the USSR Supreme Soviet (2) and the supreme soviets of the union republics were the survey and development of peat resources directly relegated to specific varieties (sub-types) of mineral resource utilization. There are six articles, by way of example, in the BSSR Mineral Resources Code (3) that are directly devoted to questions of peat extraction as a useful mineral. Analogous norms are contained in the mineral-resource codes of other union republics that have considerable reserves of peat resources.

The legal consequences of the adoption of new legislation on mineral resources had great theoretical and practical significance. First, exploration and extraction of peat came to be legislatively numbered among mineral-resource utilization, i.e. mining activity. Second, the legal status of plots with mineral resources was established in relation to peat marshes being developed or intended for development. Third, the ministries and other state organs that organize the process of peat survey and its extraction were recognized by law as special mining departments, and the exploration services and peat enterprises subordinate to them as specialized exploration organizations and enterprises. Fourth, existing legislation on mineral resources came to be fully extended to the indicated departments, organizations and enterprises.

As practice demonstrates, however, the publication of all-union and republic laws on mineral resources did not exhaust all of the problems in the survey and development of peat reserves. The Instructions on the Survey of the Peat Deposits of the USSR adopted by the USSR Ministry of Geology (4) as a stage in peat exploration in particular envisages the survey of exploitable deposits within the limits of mining concessions. In essence, a not quite successful analogy was made here with the survey of oil, coal, gas and other useful minerals within the limits of mining concessions. Meanwhile, insofar as according to Art. 11 of the Foundations of Legislation on Mineral Resources and Art. 23 of the BSSR Code on Mineral Resources, a mining-concession document is not required for the extraction of peat, there cannot in practice be exploration of peat reserves within the limits of mining concession that do not actually exist. The indicated stage of peat exploration should therefore have been excluded from the Instructions on the Survey of the Peat Deposits of the USSR.

By analogy to deposits of oil, coal and other useful minerals, Art. 11 of the Foundations of Legislation on Mineral Resources and the corresponding articles of the republics mineral-resources codes (Arts. 23-25, 44 and 46 of the BSSR Code on Mineral Resources) contain the term "peat deposit." GOST [All-Union State Standard] 21123-85, approved and put into effect by decree of the USSR State Committee on Standards (5), in turn gives the completely opposite concept of "peat field." The term "peat deposit" is moreover envisaged as impermissible for usage in official documentary and literary sources. In this case, there exists a certain unilateralism and lack of coordination in the substance of the standard document to the provisions of the laws on mineral resources.

It seems that the use of the term "peat field" is not devoid of justification for instances of defining the concept of geological transformations consisting of the stratification of peat as typified by the corresponding natural physical properties, hydrolicity and estimated productivity (excessive dampness, specific nature of the vegetation etc.). It is fully acceptable to designate unassimilated sites, as well as sites used for agricultural, timber, water-management and sanctuary purposes.

As for sites with known peat reserves that are intended for extraction or are already being developed, on this plane they are more correctly called peat deposits, as is required by the mineral-resources legislation. In other words, the term "peat field" should logically reflect the natural geological, agrarian and nature-conservation properties of peat resources that are the earth's surface, while the concept of "peat deposit" in a geological and economic evaluation of the useful minerals, part of the interior of the earth. In this connection, the aforementioned standard could expediently be supplemented with the concept of "peat deposit," which would make it possible for the USSR State Committee on Standards (5) to be brought into accordance with the conceptual apparatus used in mineral-resources legislation and to expand the contextual designation of the dedicated economic purpose of peat resources.

Because of the inclusion of peat among useful minerals by the legislation on mineral resources, known reserves of it are subject to compulsory confirmation, without which the commercial development of peat deposits is impossible. The classification of reserves of deposits and forecasted resources of solid minerals adopted by the USSR Council of Ministers (6) envisages that a determination of the procedure for confirming peat reserves is under the purview of the councils of ministers of the union republics.

In executing these instructions, the RSFSR, Lithuania (7) and some other union republics adopted special legal documents that regulate in detail the process of confirming peat deposits. There is no such document in Belorussia, and peat reserves, without an adequate standards basis, are confirmed by Gostorffond [State Peat Fund] of BSSR Gosplan in accordance with extant practice. Taking into account the legal significance of the indicated action as an essential condition for the appearance of the right of commercial peat extraction, a "Statute on the Procedure for Confirming Known Peat Reserves" must be developed and approved in the BSSR in which should be defined in the form of standards for the state organ and the procedural process. Moreover, insofar as the discussion concerns the confirmation of peat reserves as a useful mineral, this process should more correctly be concentrated in a geological department--the BSSR Geological Administration.

And, finally, Art. 24 of the BSSR Mineral Resources Code stipulates the overall procedure for submitting peat deposits for development. This same article also at the same time envisages the resolution of issues of granting plots of land for this same purpose for production and domestic peat-enterprise facilities, roads etc. in accordance with the requirements of the BSSR Land Code. Mining law consequently prescribes special conditions for the appearance of rights of the use of mineral resources in peat extraction for peat producers. The right to plots of land that support the peat-production

process should arise on separate grounds as contained in land legislation. These specific delimited features of Art. 24 of the BSSR Land Code, however, are not directly reflected and are not necessary herein; it seems that this legal norm should be developed in a separate legal-standards document that details the procedure and grounds for granting peat deposits for development. The Statute on the Procedure for Granting Peat Deposits for Development, approved by the RSFSR Council of Ministers, and the Statute on the Procedure for Issuing Permission for the Commercial Development of Peat Deposits, adopted by the Ukrainian SSR Council of Ministers (8), stipulate special grounds and procedures for granting peat deposits, as part of the earth's mineral resources, for commercial development. Sections of land for the disposition of the production and domestic facilities of peat enterprises and roads are granted in accordance with the requirements of the corresponding articles of the land codes of the indicated union republics. The processes of granting peat deposits for development and plots of land supporting peat extraction are consequently regulated by the legal norms of separate sectors of legislation.

Similar documents have not been adopted in Belorussia, and deposits are placed under peat extraction in accordance with the requirements of Arts. 11 and 12 of the BSSR Land Code and the Statute on the Procedure for the Institution and Consideration of Petitions for the Granting of Sections of Land as approved by the BSSR Council of Ministers (9). Such practice is not coordinated to the provisions of existing legislation on mineral resources.

If the substantive aspect of the allocation of peat deposits for development is carefully analyzed, these actions are really nothing other than the granting of the use of plots with mineral resources for the extraction of useful minerals. A decision by the organs that account for the reserves of peat is therefore essential on the possibility and expediency of developing a specific deposit, only with the presence of which will the governments of the union republics, oblast ispolkoms and other authorized organs of the state correctly promulgate decrees or resolutions. Determining the outer boundaries (contours) of the deposit intended for development, the method of peat extraction and the type of peat product, the procedure for recultivation and the directions of utilization of the areas being worked, the conclusion is to a certain extent reminiscent of a mining concession issued by the USSR Gosgortekhnadzor [State Committee for the Supervision of Safe Working Practices in Industry and for Mine Supervision] in the extraction of other useful minerals (coal, oil, gas etc.). Conclusions and mining concessions are not needed, as is well known, for plots of land.

Taking into account that the granting of peat deposits for development and the delineation of plots of land for this purpose are actually and legally qualitatively diverse in the nature and substance of the actions, like standard documents existing in a number of union republics, a Statute on the Procedure for Granting Peat Deposits for Development should also be prepared in Belorussia that makes concrete Art. 24 of the BSSR Mineral Resources Code. Plots of land for the placement of peat-enterprise facilities and roads should be granted according to rules envisaged in republic land legislation.

An analysis of existing legislation on mineral resources and land legislation makes it possible to draw the conclusion that peat deposits can be deemed land-use facilities until the full excavation of its balance-sheet reserves. From the moment the process of peat extraction is halted and the areas worked acquire the status of destroyed land, for which the execution of recultivation operations is required to bring them into a suitable state for economic utilization. Upon the conclusion of the recultivation of peat workings and their transfer to the category of agricultural, timber or water-resources land, they once again acquire the legal status of land-use sites as defined by land legislation.

Thus, insofar as legislation on mineral resources deems geological survey and the development of peat deposits as special varieties of mineral-resource utilization, the conceptual apparatus, processes of regulating survey and the development of peat reserves used in standard documents on peat resources should wholly correspond to the provisions and instructions of mining law, and are not replaced by land-law norms. The fulfillment of this requirement is especially topical under conditions of restructuring, which is permeating all spheres of socialist society. On a practical plane, it will make it possible to ensure more fully the observance of legality in the area of nature use under consideration, as well as raise considerably the efficiency of peat-resource utilization.

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